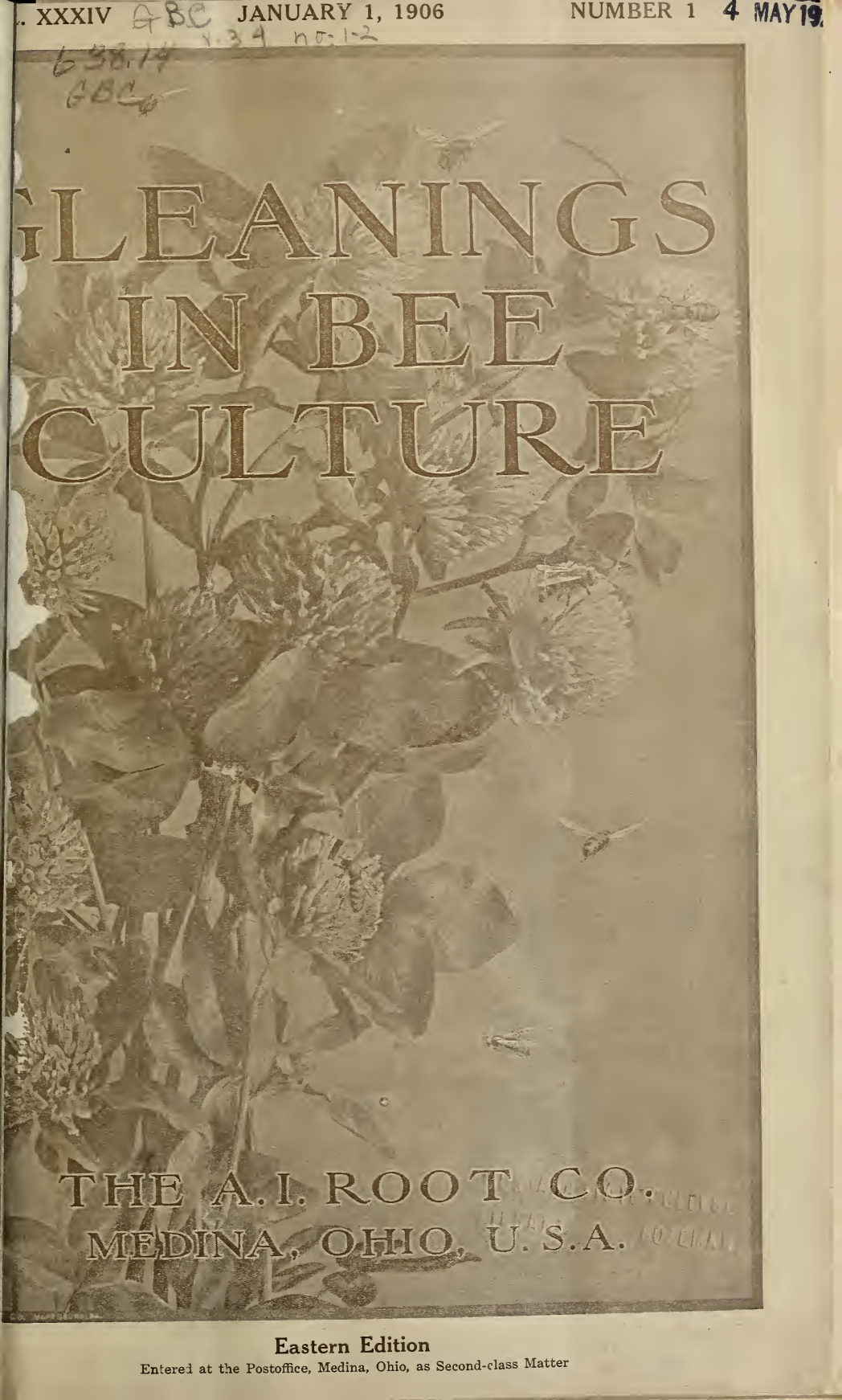


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FANCY.—All sections to be well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise; all the cells sealed except an occasional cell, the outside surface of the wood well scraped of propolis.

No. 1.—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside of the wood well scraped of propolis.

No. 2.—Three-fourths of the total surface must be filled and sealed.

No. 3.—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

CINCINNATI.—The nice weather holds back the demand for comb honey. Crops seem to be exceedingly short, and producers in the West keep the prices high. We quote as follows: Fancy water-white and No. 1 white clover, 14 to 16; No. 2, 12 to 14. Extracted seems to be more plentiful, and we quote same in barrels, light amber, 5½ to 5¾; in cans, ½ ct. more; white clover, 7 to 8. Beeswax, 28 to 30. C. H. W. WEBER,
2146-8 Central Ave., Cincinnati, O.

SCHENECTADY.—The market is well cleaned up on all grades, and white clover is really becoming scarce; but the demand is gradually diminishing also, which prevents prices advancing to any extent. We quote fancy white clover, 15; No. 1, 14 to 15; No. 2, 12 to 13; buckwheat, 11 to 12; extracted, light, 6½ to 7½; dark, 5½ to 6. CHAS. McCULLOCH,
Schenectady, N. Y.

BUFFALO.—White comb honey is in very good demand now. Prices do not advance, but stock is getting quite low in the market. Buckwheat sells when offered very low. Mixed is hard to sell. Extracted sells slowly. White comb honey, No. 1 and fancy, 13 to 14; No. 2 and fancy, 11 to 12; No. 3, 10 to 11; buckwheat, 9 to 11; extracted, white, 6½ to 7; extracted, dark, 5 to 5½. Beeswax, 28 to 30. W. C. FOWNSEND, Buffalo, N. Y.

ATLANTA.—Comb honey is very scarce with us at this writing, and we are selling what little we get as follows: Fancy, 12½ to 14; No. 1, 12 to 12½. Beeswax, 27½ to 30. JUDSON HEARD,
Atlanta, Ga.

KANSAS CITY.—The honey trade is a little dull here on account of the holidays, 24-section fancy white selling as low as \$3.00; market about \$3.15; amber, \$2.75 to \$3.00. Beeswax, 25. We look for the market to pick up after the holidays. C. C. CLEMONS & Co.,
Kansas City, Mo.

ST. LOUIS.—Since our last, of Dec. 7, our honey market is unchanged in prices, but the demand for extracted honey is not as brisk as it has been, and some of the lower grades are accumulating, especially in barrels. We quote: Fancy white comb honey, 15 to 16; No. 1, 13 to 14; amber, 12 to 13. Extracted California, light amber, 6 to 6½; white at 7; Southern in barrels, 4½ to 5½; in cans, 5½ to 6. Beeswax, 28.

R. HARTMANN & Co.,
Dec. 18. 114 So. Second St., St. Louis, Mo.

TOLEDO.—The market on comb honey is not as strong as last quotations. Prices have weakened somewhat on account of the holiday rush. We quote fancy white at 14½ to 15; No. 1, 13½ to 14. The demand for extracted honey remains firm, and prices are good. White clover in barrels brings, in a retail way, 7 to 7½; cans, 7½ to 8½. Amber in barrels, 5 to 5½; cans the same. Beeswax, 26 to 28. GRIGGS BROTHERS,
Toledo, Ohio.

TORONTO.—Honey market is looking up a little, but prices remain the same. Firms who purchase large lots claim they can get all they require at the old prices yet, although the demand is a little brisker. Dec. 15. E. GRAINGER & Co., Toronto, Can.

CHICAGO.—The market continues to rule steady, there being a fair demand for the best grades of comb honey, other kinds selling slowly with prices unchanged from our last quotations. R. A. BURNETT & Co.,
Dec. 18. 199 South Water St., Chicago, Ill.

FOR SALE.—500 cases of light amber extracted honey, at 5c, f. o. b. Selma, Cal. Gathered mostly from alfalfa. O. L. ABBOTT, Cor. Secretary
Cal. Bee-keepers' Association.

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FOR SALE.—Clover or buckwheat extracted honey. Write for price, and quantity desired. Sample, 10 cts. Comb honey all sold. C. B. HOWARD, Romulus, N. Y.

FOR SALE.—Buckwheat honey, in 60-lb. cans, at 6 cts. C. J. BALDRIDGE,
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FOR SALE.—Extracted honey—fancy white, 6½ cts.; fancy amber, 6 cts.; ¼ cent less in five-case lots or more. C. C. CLEMONS & Co., Kansas City, Mo.

WANTED.—Comb and extracted honey. State quality, quantity, and price. JUDSON HEARD & Co., Atlanta, Ga.

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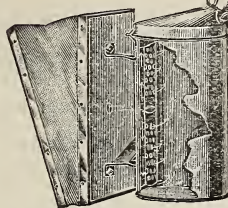
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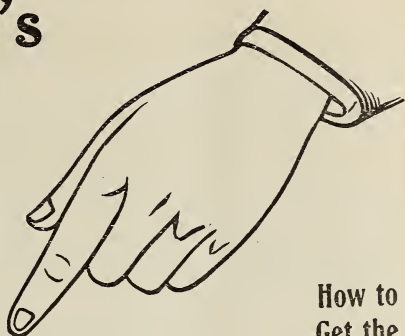
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S. S. McCLURE

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McClure's Magazine

New York City

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Beginning January 1, 1906, Mr. C. P. Dadant will begin in the WEEKLY AMERICAN BEE JOURNAL a series of articles describing in detail the very successful methods of the Dadants in the production of large crops of honey. To the one who wishes to make money in keeping bees, this Dadant series of articles will be worth—well, who can estimate their value?

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This is a new department in the WEEKLY AMERICAN BEE JOURNAL, conducted by Mr. Morley Pettit, a very successful bee-keeper in Canada, whose honey crop the past season was 40,000 pounds. He will have something worth while to say in his department, not only to Canadian bee-keepers, but to all others.

SOUTHERN BEEDOM

This is another new department to begin in the WEEKLY AMERICAN BEE JOURNAL January 1, 1906. It will be conducted by Mr. Louis H. Scholl, of the Texas State Agricultural College, in charge of the Experiment Station Apiaries, numbering some 250 colonies. It will be a great department for Southern bee-keepers.

The foregoing are only SAMPLES of the good things to be in each number of the old WEEKLY AMERICAN BEE JOURNAL for 1906. And the cost is only \$1.00 a year—less than two cents a copy. Every bee-keeper who wishes to succeed should have the AMERICAN BEE JOURNAL, no matter how many other bee-papers he may be taking. Sample copy free, or a three-months' trial trip for 20 cents. Address

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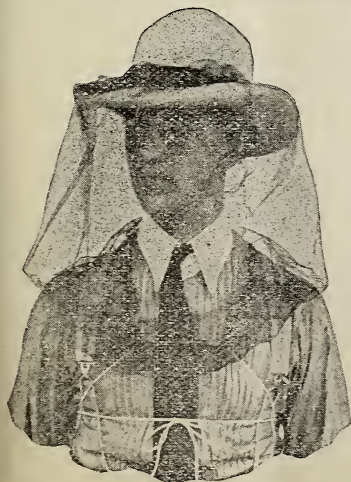
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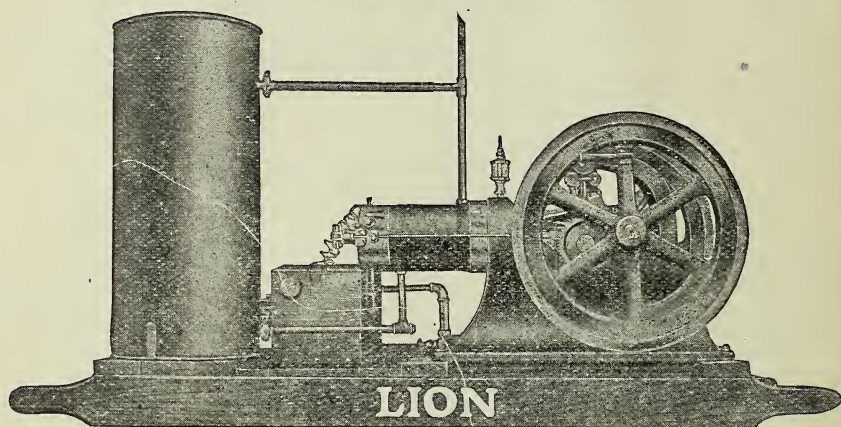


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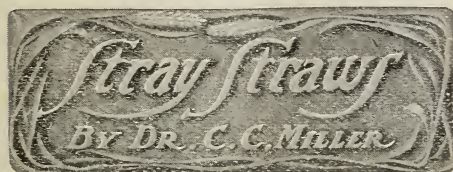
BEE CULTURE

ILLUSTRATED
SEMI-MONTHLY
Published by THE A. I. ROOT CO.
\$1.00 PER YEAR MEDINA, OHIO

Vol. XXXIV.

JAN. 1, 1906.

No. 1



THANKS, Dr. Phillips, for facts about the Breeders' Association, p. 1303—been longing for something of that kind. Here go my two dollars to Washington.

JUST WHY does J. A. Green want to extract from a foul-broody hive first, p. 1299? If to avoid getting foul combs in clean colonies, one would think the foul combs should be extracted last; but there may be some other reason.

IF LAND AGENTS in any part of the country complain that they can not get free advertising in GLEANINGS, it will hardly be those Texas fellows—unless they're very unreasonable. [You will not forget that Texas is the largest State in the Union. It has immense areas, as yet with scarcely any settlers on them. It is these unoccupied fields that bee-keepers should go to rather than squat down in some territory already overstocked with bees.—Ed.]

NEVER did I feel better satisfied with the time of cellaring my bees than this year. They had frequent flights till Nov. 28, and on that day it was 62 degrees, and they flew from 8 A.M. till after 3 P.M. Next morning it was 22 degrees, with a little snow, and they were hustled in. There has been one day since when it was warm enough for bees to fly; and if I had known that in advance, the bees would have been left out for it. But if they had been left out, and then the flight day hadn't come, they would have suffered for it. If it were to do over again I would not do any thing different. Take bees in the next day after their last flight, but don't take too many chances on a flight day that may never come. I'd rather take them in ten days before the last flight day than two days after.

ARE YOU NOT a little premature in your conclusions about cellaring bees early or late, Mr. Editor, page 1302? Your two lots were taken in three weeks apart, the second lot having the benefit of a second flight, that flight, I suppose, being just before cellaring. That three weeks used up more bees and more stores out than in. Why shouldn't it? But wait till next spring before you conclude that there was any "folly" about the three weeks' delay. The three weeks of greater cold cost more bees and stores outside, while the three weeks' confinement cost nothing inside. The confinement costs nothing; but the last three costs, and costs heavily, if it follows a confinement of four or five months, and it may turn out that more will be lost by the extra confinement than was saved by the earlier cellaring. [We have our colonies all marked in the cellar, and, according to your suggestion, we will note their comparative conditions when taking out next spring.—Ed.]

REV. CHARLES SCANLON'S speech pleased A. I. Root, p. 1333. I understand Mr. Scanlon is set aside by his denomination to spend his entire time working against the liquor business—the only man in the country occupying that unique position that I know of, although you may possibly tell us of others, Mr. Editor. If each denomination were to pick out its best men for that work, there would be fewer pastors dumb on the subject. [I do not know of another case where a denomination is putting one of its own ministers in the field devoting his whole time to the subject of temperance. But I do know that there are many ministers now employed by the Anti-saloon League in the various States of the Union who devote their entire time to fighting the liquor evil; and, by the way, as I personally know, some of these men during the time the legislature is in session sometimes spend fifteen or twenty hours in solid work a day, all because the harvest is great and the laborers are few. But, thanks to the Lord, there are tenfold more laborers in this special field now than there were a few years ago.—Ed.]

"PULVERIZED (not confectioners') sugar" is recommended for candy, p. 1301. If you buy in Marengo, both will come out of the same barrel. In M. Ward's catalog, "Confectioners' XXXX powdered" rates a trifle higher than "Powdered," which looks as though "Confectioners'" should be the better. I wonder what's what, anyhow. [I learn from Dr. E. F. Phillips that a little starch in powdered sugar will do no harm. Mr. Benton uses just the ordinary pulverized article worked up into a good stiff dough. In a few days this may require a little more sugar as the dough softens up. Those who have received queens from the Department will remember that the candy-hole in the cages for holding it is lined with beeswax, and then covered over nicely with a piece of thin foundation. The purpose of this is to confine the moisture of the candy so it will not become too dry and hard. This has particular reference to queen-cage candy. That which is used for feeding bees in winter is made in precisely the same way, although it is not so important to have the candy "just right."

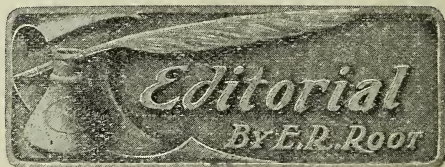
PROF. COOK, in his department, p. 1296, doesn't say a word about getting a bigger crop of honey, but spends his time talking about mandibles, neuroptera, and things. GLEANINGS isn't an entomological journal, but a bee journal; and when we pay our money for it we want something that will tell us just how to get the biggest crops of honey. But—but—hold on, young fellow—and I want to speak more particularly to younger readers—you take the advice of one who is no spring chicken, and who has spent many a year with the bees, and do you read every word Professor Cook gives about the classification and the structure of the bee. Every item you get in that line will help to make your world just a little bigger and brighter, life a little more worth living. An intimate knowledge of the structure of the bees will help to make play out of your work with them instead of drudgery, and will help you to live longer, and so to get more honey. It will also help, at least a little, to make you manage them more intelligently. Don't stop at reading once: read over and over, and study till it is clear. It may seem like drudgery, but it will pay well. I wouldn't give up for a good deal the little I know about how a bee is put together.

YE EDITOR asks, p. 1292, "But is it true, doctor, that you generally have hot nights during the honey-flow?" I've shut my eyes and tried hard to think what is the right answer to that question, and really I don't know. Without having kept an exact account, it isn't easy to recall just the exact proportion of cool nights; and possibly an exact account would show more cool nights than I had supposed. Here's one thing I do know: We always count on our best flows when we have nights so hot that we have to hunt around for a spot cool enough to sleep. Now, it's just possible that, instead of hav-

ing all the increase credited to the better flow after a hot night, at least part of it should be credited to the better wax-working during hot nights. [In this locality we very seldom have it so hot as to make it decidedly uncomfortable at night. Whenever I can not sleep, and feel I am suffering from lack of air and a good cool breeze, my physical condition is to a great extent overbalanced by the feeling that this will be just right for nectar secretion. But going back to the point of discussion, if there should be a spell of cool nights (and your locality could hardly be exempt every season) the protecting-cases will be a great advantage; and if the nights should turn very hot they will do no harm. The chances are they would be an advantage, taking the seasons as they come and go.—ED.]

"WARNING against reading brilliant but ruinous attacks on the marriage relation in the books and plays of Shaw and Mæterlinck was delivered by Dr. Felix Adler in an address before the Chicago Ethical Culture Society yesterday. 'To know the manners of disreputables of the other half is not to know life: it is to know death,' was Dr. Adler's declaration. 'You arise from such a book and go back to the purity of your home life feeling that you have been debased. . . . Among the social insurrectionists who avow egotism as their principle is to be found Mæterlinck. Admitting his delicate workmanship, his Monna Vanna is a brief that passion, if only strong enough, is justified in breaking all bonds.' Prof. Adler's closing words were, 'Don't read these books or see these plays—don't.'"—Chicago daily.

Some months ago I objected to unsoundness in Mæterlinck's beautiful and brilliant work on the bee—not so very much of it, but the rottenness is there all the same, and all the worse because insidious, so beautifully clothed that good men have read the book and praised it without stint without ever noticing the evil that was in it. Let us keep clear of poison, even when offered in a gilded cup. [I shall have to confess I have not read Mæterlinck as I suppose I should. Depending on the favorable comments of others we cataloged it along with other bee books. I will investigate.—ED.]



IRRESPONSIBLE COMMISSION HOUSES.

BE careful about shipping honey to a new commission house or to a new firm advertising to buy honey outright. If you are at all in doubt, write us first. We have already had a case in hand where a party shipped

to a new concern. Investigation revealed the fact that the parties could not be found at the address named, and the honey is gone, nobody knows where.

Be careful especially about sending honey on *outright sale*. Always get your money first or else ship C. O. D.—that is, send a bill of lading to a bank for collection before the honey is turned over.

OUR INDEX FOR 1905; SOME VALUABLE LESSONS TO BE LEARNED FROM IT.

WE are inclosing in this issue the index for 1905. Actual count shows there are 1840 references. This will give our readers some idea of the scope of GLEANINGS for the past year.

I suppose the average person will throw the index aside as being of little or no value to him. Let me assure him that he is making a mistake. Perhaps he thinks he could not find what he sought, even if he tried. Again he is mistaken.

This list of subjects was prepared with a great deal of care, some being "cross-indexed," as the same catch-word may not occur the same to every one looking the matter up. For example, there was considerable discussion during the past year on the scent of bees as a factor in introducing. One reader might think of the word "*odor of bees*." By consulting the index he will be referred to "*scent of bees*." Another subscriber might think of the word "*introducing*" as affected by the scent factor." So we place it under both catch words; viz., Scent and Introducing.

There are comparatively few subjects cross-indexed in this way—only the most important, and such as are susceptible of one or more catch-words, all equally good. The subject of *robbers*, for example, will be found under the head of *robbing* only, for the reason no one would think of looking under another heading.

I have dictated almost every line of this index to W. P. Why did I do it? For the simple reason that the editor is supposed to know what subjects are important, and what is the subject-matter of any item or article in the journal throughout the past year, almost at a glance.

LESSONS TO BE LEARNED.

An index may be used in a way that will impart a great deal of information. One may have read the journal for a year very carefully, and may suppose that he is quite familiar with its contents, and with all the conclusions arrived at; but if he will take up one special subject in connection with the index he will be surprised to see how his impressions will be corrected. As the discussion on any particular subject continues, new sidelights are thrown in. The danger is that these last sidelights may outshine the important sidelights of *earlier* discussion. In order to get a perfectly unbiased and unprejudiced view of the whole subject, the index should be carefully consulted, looking up each reference.

I respectfully suggest that all our principal correspondents go over this index carefully to freshen up their memories regarding some of the important discussions of the past year. The knowledge of what has been said and done is very important to enable the writer to prepare new matter on that particular subject.

One is almost amazed at the amount of discussion on the Hoffman frame last season. One writer would condemn it roundly, and another would indorse it in the strongest language. In one issue the frame was relegated to the scrap-heap, and in the next it was regarded as the *ne plus ultra*. But if one will go over all the discussion from beginning to end he will be impressed by the fact that the Hoffman is popular, not because *every* one considers it the best frame, but because so large a percentage prefer it to any thing else. It is the old, old story, that you can not make one shoe fit every foot. We must not only have shoes of different sizes, but shoes of different styles. A shoemaker who would try to force on his patrons only one style of shoe, and sell only that kind, would be not only shortsighted from a business point of view, but half crazy as well. The manufacturer who would sell only one kind of frame or section, and only one style of hive, would get only a part of the trade.

There are several other valuable lessons that may be gained by a careful study of a good index. I am frank to confess that, in the preparation of the one for last year, my own view of things apicultural has been very materially broadened, not to say modified. I am reminded of the old story of the two knights, who, approaching each other, met under the overhanging sign of the Big Dragon. One made a reference to it as being blue, and the other corrected him by saying it was red. Words led to blows; and when each was thrown on the other side of the sign, each saw that the other was partly right, and harmony was soon restored. Shall we not, in the discussions during the new year, be more charitable toward each other's views, especially when we take into consideration the two factors of environment and the previous training of the "other fellow"?

WHAT THE RUSSIAN REPRESENTATIVE TO THIS COUNTRY HAS TO SAY OF CAUCASIANS.

OUR readers will remember that The A. I. Root Co. had in its apiaries for a part of two seasons a representative of the Russian government, Mr. Abram Titoff, who came to America to study bee-keeping. After leaving here he worked for about two months in the height of the honey-flow with E. W. Alexander. He then attended the National convention at St. Louis, where he read a paper on Russian bee-keeping. He came back to Medina, and last February went to California to work with some of the extensive bee-keepers of the sage districts.

In the mean time we had lost track of

him, and possibly would not have heard of him even now but for the fact that editorially I spoke of the Caucasians as being disinclined to take feed out of feeders, and that we were fearful they were too good-natured to be good for any thing.

Dear Mr. Root:—Allow me to say a few words concerning the Caucasian bees. In your editorial in the Nov. 1st issue you claimed that Caucasian bees were not able to get food from the feeders. From the experience I have had with them I must say I have found it not so. Last summer I received a number of queens from Caucasus; successfully introduced them, and, before winter came, I had some colonies of Caucasian bees. To six of these colonies I was forced to give a syrup as they had not enough honey in storage. I fed them from the division-board feeder (made of galvanized iron). To each colony was given about 12 lbs. of syrup, and all this food was taken in a very short time. This shows that Caucasians are not only smart enough to get food, but they will accomplish it without sacrifice—not one bee was drowned in the syrup.

In your case I think there was some other cause for not eating food, but not a peculiarity of this race of bees.

As for the color of bees, there are three kinds of Caucasians: The yellow, the dark yellow, and the dark. From your words on page 1180 I conclude that you have in your apiary the dark Caucasians. The yellow Caucasian bees are not much different from Italians in color. Los Angeles, Cal., Dec. 8. A. TITOFF.

I have asked Mr. Titoff to tell us more about the Caucasians in Russia, especially the yellow stock of that blood. As there seems to be some conflict of opinion in this country, a statement from a native of Russia, who probably knows as much about these bees as we do of Italians, would be of more than ordinary interest.

THE NATIONAL CONVENTION AT CHICAGO.

THIS has come and gone. While it was not as large or representative as some of our previous conventions, yet what it lacked in these respects was fully made up in the high quality of the discussions and the men present. Indeed, I believe that they were of a higher order than we ever had at any previous meeting. For example, the discussion on the subject of swarm control, at the first session, brought out men and methods in a way that had never before been done. As I sat at the feet of the Gamaliels who handled this subject in a masterly way, I was impressed with the feeling of how little of the science of swarming I actually knew.

This discussion was only a sample of other good things we had at this convention. I will endeavor to give a brief digest of it in later issues of this journal. In the mean time, those who are not already members of the National should enroll at once in order to secure the official report, taken by the official stenographer in full. This report will be well worth a dollar, to say nothing of all the other benefits that one may secure through an organization that is now nearly 2500 strong. Send your dollar to Mr. N. E. France, Platteville, Wis.

Unfortunately there was at this convention a prolonged discussion over a proposed amendment to the constitution; and when we got through *we were almost where we started*. This seems to be unavoidable under our present rules. But this convention

was in this respect no worse than some of our other ones—indeed, I believe it was far better; but several at the various conventions have at various times expressed themselves as being very sore because they are compelled to hear wrangling over amendments and parliamentary tactics when they had come hundreds of miles to learn something from their brothers about bees. I respectfully suggest to the board of Directors and to the management in general that some plan be formulated whereby proposed amendments may be discussed in the bee journals, where those not interested are not compelled to give up any of their valuable time, and where, too, the *whole membership*, or so much of it as is interested, can have a hand in it. It would be well to take into consideration that it costs each one who attends these conventions anywhere from 50 cents to \$2.00 per hour for the two and a half days of the convention.

Mr. Dadant made a good presiding officer—strictly impartial and absolutely fair, and no blame attaches to him for the length of the discussion referred to. But, more anon.

Regarding the question as to whether I should accept the office of Director of the National, to which I have been recently elected, I have finally decided to take the advice of my wife, and have, therefore, tendered my resignation. There are plenty of strong available men who can serve in the capacity of Director far better than I; and I feel satisfied that the Executive Committee will make a wise appointment. As before stated, this action is not based on any dissatisfaction with the policies of the National nor toward its officers. Indeed, I most heartily approve of that magnificent organization, and shall do all I can to help it.

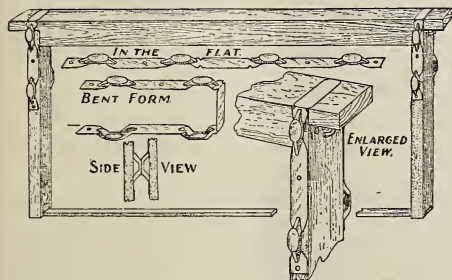
MR. and Mrs. A. I. Root are now settled on an island off Osprey, on the west coast of Florida. He has taken with him a select breeding-queen, and is going to try some experiments in breeding select drones.



METAL-SPACED HOFFMAN FRAMES.

For some years we have been looking for a metal-spaced Hoffman frame that would retain practically the advantages of the one all of wood, and yet sacrifice none of its good features. We believe we have now secured it. We asked the foreman of our machine-shop, Mr. Frank G. Marbach, to devise some form of metal spacer, preferably of stamping, that could be attached to a regular standard thick-top frame having end-bars the same width from top to bottom, and the same width as the top-bar itself. How well he succeeded will be made plain by the illustration herewith.

It will be noted that the raised projections, or bosses, are stamped at regular intervals in a narrow strip of tin. The lateral projection of these bosses is equal to just half the distance between the end-bars when properly spaced; and when these end-bars are $1\frac{1}{8}$ inches wide there will be a $\frac{5}{8}$ -inch space between them when separated $1\frac{1}{8}$ from center to center. The depth or projection of the bosses will, therefore, be just half, or $\frac{5}{8}$ inch. As they are stamped right out of the sheet metal they will be very strong, especially as they are stiffened by the ribs or braces on each side. But primarily the object of these ribs is to prevent



MARBACH'S METAL-SPACED HOFFMAN FRAME.

these raised projections from catching or hooking on each other when these frames are inserted into or removed from the hive by providing a sliding contact over the bridge-like ribs.

The whole strip with its raised projections is bent in the form of a letter U, and slipped over the top-bar and end-bar, binding both together.

One objection to the Hoffman is that the projection of the top-bar that rests on the hive-rabbet being so frail it is liable to split or break off; but this band of metal firmly binding it to the end-bar will make this impossible on this frame. As the raised projections are united by strips of metal they will always be equally distant apart, so they will always register—that is to say, come directly opposite each other when the frames are in the hive.

Another objection that has been raised against the regular Hoffman was that, if it were not nailed up right—the V edge always the same way—its value would, to a great extent, be destroyed. The new Hoffman can not be put up wrong, for it has no rights and left. No matter how the spacers are put on, they will always come right.

The appearance of the frame put up with this spacer with its bright metallic binding is very neat. In fact, we may say it is the handsomest frame, and at the same time the strongest, of any put out heretofore. It may be handled in precisely the same way as the Hoffman; and, no matter how abundant the propolis may be in any locality, these small metal surfaces can not be glued together.

The usual objection, that this being a metal spacer will interfere with the uncapping-

knife for extracting, may be possibly urged; but in talking with some of the extracted-honey men at the National convention, who, by the way, generally approved this frame, it does not appear that this objection would be as serious in actual practice as in theory. In all cases where metal spacers are used, the uncapping-knife must be handled in a slightly different manner. It is the general practice to start the blade of the knife (when the frame is stood on end) at the bottom edge, or what would be near the end-bar now at the bottom. The knife is then worked seesaw fashion upward until it is almost up to the other end of the bar at the top. It is then withdrawn, when the other edge of the blade is entered just below the upper end-bar, meeting the first cut, when the whole film of capping will drop away free. But I was told that one could use the uncapping-knife with metal-spaced frames in the regulation way, using one cutting edge throughout. A little care on reaching within a quarter of an inch of the metal will prevent dulling the knife.

It should not be understood that this metal-spaced Hoffman will supplant the regular all-wood Hoffman. The probabilities are that the great majority of Hoffman users will still prefer the old standby, as propolis is not a serious enough problem to interfere with its use in most localities. This new frame is merely offered to suit conditions where propolis may be unusually abundant, or to meet the preference of those who do not want any sticking at all of the frames; and those who wish something which can be picked up out of the hive singly or in pairs *without a pry at any season of the year, anywhere*, need to look no further.

N. B.—This frame can be used interchangeably with the regular Hoffman frames in the same hive, without modification.

THE ROOT TWIN BABY MATING-BOXES.

As intimated in our Dec. 1st issue, p. 1244, we now recommend a twin mating-box, using a frame three to the L, in preference to the small Swarthmore or Pratt box containing two frames, six of which would just fill the regular standard Langstroth. This box is almost cubical in shape, and is divided centrally from top to bottom with a thin veneer partition-board. This is made thin in order that the warmth of the two clusters may be the better combined into one cluster. In each division there are two little frames, three of which, as explained, will just go inside of the regular standard Langstroth frame, the division being made on perpendicular lines, see Fig. 2. In order to make these hang in the hives in the little twin mating-box a little piece of folded tin slides over each end of the top-bar, as shown at F and G. These can be slid back as shown at B, Fig. 2, or shoved out as shown at A and F. When used in this latter position, they serve as a projection which rests on a wooden rabbet in the little hive. When the frames are to be filled out with drawn comb

and brood in all stages, the projection is slid back until its end is flush with the end-bar. They can then be inserted in a regular standard Langstroth frame, and early in the season can be filled with drawn comb and brood in all stages. When once so filled they can be slipped out of the frame with adhering bees, and two of them (when the metal projections are slid out) inserted into one side of the twin mating-box. When in position they hang on rabbets like the unspaced Langstroth frame.

Tacked to the veneer division-board is a small piece of enamel cloth. This is used on these small hives because it will peel over without disturbing the cluster; for experience has shown that it is desirable to handle these small bunches of bees without smoke. So small a cluster can very easily be scented to an extent that it loses its body or individual odor, when it will attack its own queen — something that would not be likely to happen with a large colony of bees.

The twin mating box, instead of being made up of $\frac{3}{8}$ stuff, is constructed of boards fully $\frac{1}{2}$ thick. The object of this is to make a warmer box, and at the same time provide for feeding-troughs on each side, as at C and

The whole combination makes a very warm mating-box; and when we further combine the heat of two clusters into one,

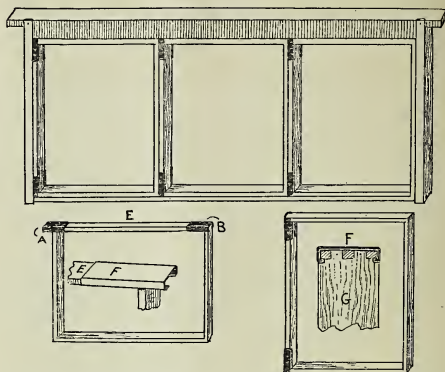


FIG. 2—THE ROOT NUCLEUS FRAMES FOR TWIN MATING-BOX.

we have what is to all intents and purposes one cluster of bees, so far as heat units are concerned, twice the size it really is. There is a ventilating-hole at A, and an entrance at B.

Experience has shown that these larger clusters are better and actually cheaper, because they will maintain their strength throughout the season. While it is perfectly practicable to mate queens in smaller boxes, yet we found last season that it was necessary to renew this small force every so often. This was not only a nuisance, but actually resulted in the loss of more bees throughout the season than would take place from the larger box here shown.

I learned one fact from Mr. A. K. Ferris, of Madison, Wis., which may make it possible for even the smallest cluster of bees to maintain itself and rear brood throughout the season. Mr. Ferris says all that is necessary is to space the frames further apart than the regulation distance of $1\frac{1}{2}$ or $1\frac{3}{8}$ from center to center; that when the frames are very small it is necessary, in order to keep up brood-rearing, to have the little bunch of bees covering the brood twice or three times as thick as it ordinarily is. He explains that, when the frames are spaced wide, and the box sufficiently large to accommodate the spacing, a comparatively small cluster will maintain itself throughout the season by rearing brood and bees.

But there are other reasons why the large mating-box built on the dual plan will be desirable; and, all together, the arrangement here shown will prove to be more satisfactory, mainly because it will stand cool weather, especially cool nights. I found at the National convention that two other beekeepers have been working along the same lines — namely, the adoption of a twin mating-box of practically the same size. One box was exhibited by Mr. Arthur Stanley, Dixon, Ill., and the other by Mr. A. K. Ferris, as above mentioned.

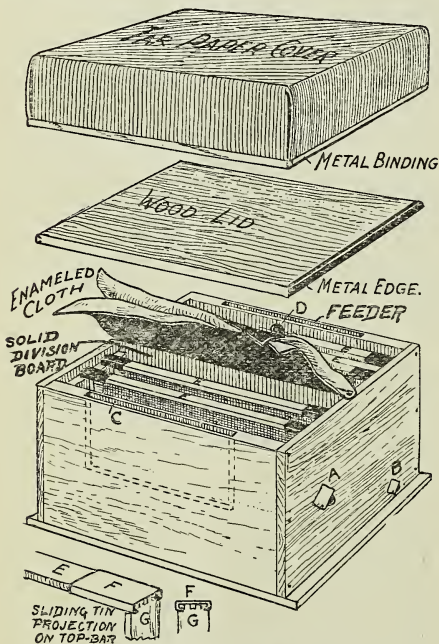


FIG. 1—THE ROOT TWIN MATING-BOX.

and B, Fig. 1. These are mortised out with a chain mortiser, and extend to the dotted lines as shown in Fig. 1. To this feeding-trough a small hole is made, through which bees enter to secure the food. A small wooden lid is placed on top of the enamel cloth, covering both sides, and telescoping over the whole is a cap of Neponset paper.



WHY DOES HONEY SELL SLOWLY?

"Say, Doolittle."

"Yes, Clark."

"You remember that question from the question-box at Syracuse before the Onondaga Co. Bee Convention of three days ago, regarding honey selling slowly this fall and winter?"

"Yes."

"What was the conclusion in the matter? I had to come away before the discussion had fairly commenced."

"I could not stay till the discussion was ended; but one of the ideas that was advanced was that adulteration had largely to do with the matter, in that it made the common people suspicious of all honey; consequently there was an under-consumption of our product through this suspicion."

"Do you believe that?"

"I do believe that there is an under-consumption of honey, and quite agree with the idea brought out — that, with less than half a crop of honey in the United States the past year, honey rarely ever sold as slowly as it has been doing for the past three months."

"Yes, that part I agree with. But do you think that the cause is the adulteration of honey, or, rather, that there are stories in circulation to the effect that honey is largely adulterated?"

"I think that this may have something to do with the matter. Don't you?"

"Do you remember when there was such a great cry a few years ago in the agricultural papers about oleomargarine, and how the markets would be ruined for butter, and the dairymen find themselves out of employment, unless the thing was stopped?"

"Yes, I remember how the papers were filled with the subject of oleomargarine, and about the great injury it was, and would be likely become, unless there was some law passed regarding the matter."

"Well, did the oleomargarine matter cause butter to sell more slowly?"

"But there was a law passed that caused oleomargarine to be sold for what it was, and not for butter."

"Correct. But was there an under-consumption of butter during this oleomargarine scare?"

"I do not fully remember."

"If you will study up I think you will find that there was no less butter on the tables in the homes and hotels of the country during those times than there was before or since, in proportion to the means with which the people had to purchase. So far

as my memory serves me, the cry of adulterated butter cut no figure as to making the people use less butter."

"That is something I had not thought about in my reasoning that the adulteration scare had to do with a lack in the call for honey."

"Then look at the liquor business. All admit that the larger share of the whisky drank is adulterated with the rankest poison, and some of it to such an extent that there is little if any pure whisky about it. Yet statistics tell us that the consumption of liquors, per capita, is greater to-day than it ever was before. Does the cry of adulterated liquors cause a slowness of their sale?"

"If you state the case correctly, it would seem not."

"It looks to me that this laying of the trouble of a lack of an energetic call for our honey to an adulteration scare is far fetched, and that it is not a reasonable ground for such bee-keepers as Doolittle, House, Bet-singer, Kinyon — yea, and the *bee papers* generally to take. Facts in other matters show that the cry of adulteration does not scare consumers of other products quite so easily."

"Aren't you coming out pretty strongly in this matter?"

"Possibly so; but I like to see people reasonable in the position they take — yes, more: I like to have them dig deep enough into a thing to know for certain whereof they affirm before they make an assertion."

"Without stopping to argue further along the adulteration line, allow me to ask how you account for this slowness in sale of our honey; for we all admit that there is not the demand for honey which we wish there was."

"Simply on the ground that the great mass of our people do not consider honey as something which it is necessary that themselves or their families have. In other words, the desire for honey is not so great as it is for butter, whisky, tobacco, etc. Their *butter* they must have or the dinner is not worth the eating. The whisky they *must* have, even if it means sorrow, ruin, and crime to themselves, their families, the nation, and the world. Their tobacco they *must use*, even if their clothes are ragged and their shoes are out at the end of their toes; and the tea-drinking habit must be indulged in whether there is any honey on the table or not."

"But don't you think that we could educate the people to a point where they would consider honey of as much a necessity to them as tea, and the things you have mentioned?"

"No, never."

"Why not?"

"Because when you get them educated, and the time comes from straitened circumstances that they must retrench, they never retrench in favor of honey. Did you ever know of a family giving up their butter,

sugar, tea, or tobacco for honey? And even without the straitened circumstances, after once having honey, and knowing of its goodness, many families which I know of tell me that they can make a good sugar syrup for their buckwheat cakes, a syrup that answers all purposes, and that at a cost of less than one-half of what they have to pay me for my honey. And other families which I know of will buy honey of me if I go personally and press it on them each year, but will never come to me or any other bee-keeper after it. But they would go miles and miles after their tea, tobacco, sugar, and butter, with honey right at their next door, before they would use the honey as a substitute for either."

"Well, you are advancing some new thoughts—thoughts that are, perhaps, well worth thinking over. But in your ground there is very little hope. Is there no remedy?"

"I see only one."

"What is that?"

"Let the bee-keeper stop putting the rosy side of apiculture before the public all the time, thus putting more bee-keepers into our already overstocked honey-field. Give the truth of the thing as it is, and make the question of more or better bee-keepers the prominent one for a while. Then with fewer and better bee-keepers as a basis, and a goodly lot of energy spent in a house-to-house canvass each year with our honey, perhaps we who are in it may be able to hold on and make a living out of our bees. What do you think of the proposition?"

"This is a little new to me, and I wish a little time to think over the matter. Meanwhile I will give your ideas to the readers of GLEANINGS, and let them do some thinking with us, for 'in the multitude of counselors there is wisdom.'"



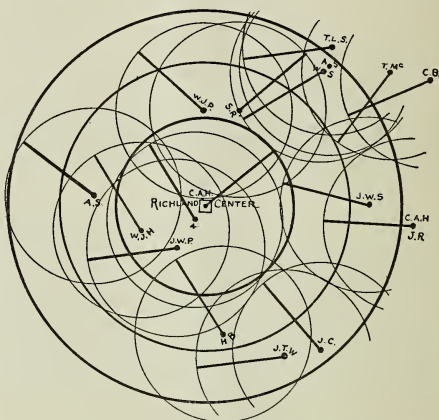
POSSIBILITIES.

How Many Colonies can be Kept in One Yard?

BY C. A. HATCH.

Richland Co., Wis., has long been noted for its honey production. Even 50 years ago, before there was any settlement by the white man, and the native Indian roamed its hills and valleys, white hunters used to invade its borders with oxen and wagon to get a load of wild honey and venison for winter use. The larger part of the county being heavy timber, of which basswood formed a considerable part, the reason for

the honey-production is not far to find. Now these noble trees that waved their branches in welcome to morning sunshine and breeze are no more. They have fallen to the needs of the farmer for tillable land or pasture, and to the greed of the lumber-man and excelsior mills. A few specimens in some wood lot, or on some inaccessible hill-side pasture, are about all that is left.



While the bee population is as large as or larger than ever, it must look to other sources for nectar.

The white-clover pastures and alsike meadows are common, and rich in nectar; but weather conditions are so necessary to these plants for best nectar secretion that we are always handicapped thereby. If we could have the warmth and sunshine of California during clover bloom, not even the famous sages would excel it for quantity or quality. The result would be startling.

This year there was not to exceed one day in six that was favorable, and yet the average from clover at my home yard was about 20 lbs. of surplus. What would it have been with six times as many working days? It would have been more than six times as much, for most of the idle days were when bloom was at its best.

To show up some of the possibilities of a given territory, and shed some light on how much honey can be produced on a given area, I have made what might be called a bee and honey census of a piece of land 14 miles in diameter, and having Richland Center for its center. If there is any place stocked up to the limit, it would seem as if this is the one. With a sectional map of the county before me, and locating each bee-man, and assuming 3 miles as the limit of a bee's flight, and drawing a six-mile circle around each apiary, the map looked like some geometrical figure based on a combination of circles. No one man could claim undivided territory.

Above is the map. The heavy-lined circles represent distances, as three miles, five miles, etc. The light lines are for each man's territory. The straight lines are to

CURING FOUL BROOD WITHOUT MEDICATION.

The Alexander Treatment for Black Brood Successful with Foul Brood in England.

BY SAMUEL SIMMINS.

I am glad to see by your issue of Nov. 1 that Mr. Alexander has been able to apply to the cure of black brood the very same treatment which I have for many years advocated as a certain cure in the case of foul brood.

In my 1888 edition of a "Modern Bee-farm," and again in the issue for 1893, I laid great stress upon the necessity of removing the old queen where disease was found, and then introducing a young and vigorous one after an interval which would allow of the bees removing the foul matter.

In *Bee Chat* during 1898, '9, I repeatedly insisted upon the great necessity of this all-important point, and in the issue for August, 1899, this fact of allowing an interval without breeding was again set forth in the clearest possible manner, pages 27 and 29.

The several propositions then published in *Bee Chat* were reproduced in the 1904 edition of "A Modern Bee-farm," and on page 121 you will find these words: "These, being queenless for a period, cleaned up every vestige of the disease before the young queen again made up a brood-nest. . . . *Make a note of this last fact in big capital letters,* for I have never known Italian or Carniolan bees (with a virgin queen), when fairly numerous, to refuse to clear out all evidence of disease during the active season of honey-gathering. . . . It is simply a question of manipulation by the bee-keeper at the right moment; for, strange as it may appear, the above results were attained without medicine in any form."

Again, on page 123: "The disease was not only once but repeatedly disposed of without destroying the combs, without medicine, and with no manipulation of the diseased cells whatever."

"There was in each case granted an interval of two to three weeks without a laying queen, during which space of time, the population being numerous, and honey coming in, all the diseased matter was disposed of. Even then we have been taught to believe the bees could not dispose of every cause of infection. But what are the facts? The bees having thoroughly cleared out every particle of soil suitable for the germs to thrive in — *and this they will not readily do all the time they have a laying queen,* etc."

The foregoing, including the italics, is reproduced from *Bee Chat* for 1899; but whereas Mr. Alexander destroyed his queens right away, I find, except in extreme cases, the better plan is to keep them going with swarms upon new foundation so that there will be no loss of brood. I have also shown in my work, and in a previous article in GLEANINGS, how these swarms may be made with no danger of carrying disease; while the young bees left on the old combs with-

out a queen (or with a queen-cell or virgin), are even better situated for cleaning them out, and there is not so much fear of fresh honey clogging the cells.

Moreover, in suitable weather two or three lots can be swarmed into one to great advantage, in that there is little if any loss of actual honey-gathering, and rather an increase instead of a ruinous stoppage in breeding; while the old queenless stocks may or may not be doubled up according to the requirements of the apiary.

The introduction of a young and vigorous queen after the interval without a fertile queen is a principle I have strongly advocated for the *past twenty years*; and though I have shown how it can be made effectual, even without medicine, very few would believe me; while in your own case, while admitting that I had made a study of the subject, you apparently went on to think the bees in England must be more immune than those with you, which, however, is not the case. As a matter of fact, my law will hold good for all who care to follow it.

Then why advocate the izaral treatment? Because, first of all, it is a preventive, and immediately checks infection, so that one knows that, in using it, he is keeping every thing clean. Next, it is useful when ordinary manipulations are not possible and the bees are not sufficiently active to help themselves. Thus if a stock is fed up with izaral in the syrup in autumn, they have a safeguard all through the dull springtime, and are probably cured before the honey season opens. Lastly, it helps those bee-keepers who can not make up their minds that, even in the active season, the bees can be helped to get rid of the disease without medication.

In conclusion I will now say that I have been able to go a long step beyond all these manipulations, in that I am curing with no medicine, no swarming, and no broodless interval. I am able to put my queens right on to combs full of brood more or less diseased, and these queens walk right through it, and bring the stock out clean every time. I don't think there is any class of bee disease to which they will not put a stop.

Broomham, Heathfield, England, Nov. 24.

THE ALEXANDER METHOD FOR CURING BLACK BROOD ENDORSED.

Also a Cure for Foul Brood.

BY E. M. GIBSON.

It was with a great deal of interest that we read the cure for black brood in GLEANINGS, page 1125, by E. W. Alexander, and our interest was all the more intense as it corroborates some experiences we have had with *foul brood* this past summer. We had foul-brood colonies in two apiaries which were queenless for some time on account of our discontinuing queen-rearing, thinking that our apiaries were as good as lost when we found we had foul brood. Just at this critical time GLEANINGS came to the

rescue and told us that the introduction of young Italian queens was a great factor in the abolishment of the dread disease, on which we resumed queen-rearing. By the time we had queens to introduce, our colonies, I should imagine, were just longing for queens, and had had the requisite time for perfect housecleaning. They have never had foul brood since the introduction of these young queens, and some of them had it very badly indeed. My partner said to me one day as we were looking through them, "I believe we have found a cure for foul brood, viz., keeping them queenless for a time," and proposed putting our queens, which are all young, into nuclei, giving the bees time to clean up and then return them. He urged me to write you, giving our experience; but I said you would laugh at us for thinking that such a simple thing could cure foul brood; and if there was any thing in it it would have been discovered long ago. Nevertheless, we had decided to try it provided it makes its appearance in the spring.

In your footnote you say, "The question may naturally arise now whether the Alexander treatment would not prove equally effective in the cure of foul brood." When the tenacious matter Mr. A. speaks of can not be removed by the bees they eat the combs out and build them up anew, as we have seen in hundreds of instances this year. In fact, one-half or two-thirds of our colonies got rid of it without any assistance in that way.

In our management of diseased colonies we have found the less room they have the better. Unless they are *very* strong, or you have plenty of brood to give them, they should be confined to a single hive. Do I hear some one saying, "I guess it was not genuine foul brood"? The foregoing experience was with *real* foul brood.

Mr. Alexander's article gave us great encouragement, and several points from which to work, the most important of which is the matter of time to keep colonies queenless. We had feared that the method, so far as our experience had reached, would necessitate keeping colonies so long queenless as to reduce them so much it would be impossible to receive any benefit from them for that year.

Jamul, Cal., Nov. 17.

[I have read both of these articles with more than ordinary interest. To say that the Alexander treatment, or the Simmins treatment, whatever we may call it, gives us hope of curing foul brood as well as black, without destroying combs, is putting it very mild indeed. But the thing I can not understand is this: Honey is known to be a medium for carrying foul brood. Supposing that the germs of this disease are in honey that is sealed up in combs in the hive under treatment, if the bees clean out the brood-combs containing the dead matter, what is to prevent reinfection of the new brood fed on this honey? We have demonstrated time and again that honey from a diseased hive

will carry the infection to another one perfectly healthy. I can explain this peculiar phenomenon in the case of black brood, because I understand from the inspectors that this disease (black brood) is *not* carried through the medium of the honey.

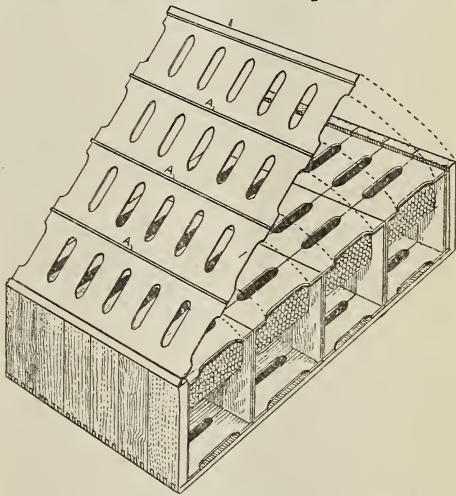
The articles by Mr. Gibson and by Mr. Samuel Simmins are both encouraging; but I must confess to a feeling of doubt that the treatment will prove effective for foul brood where the combs of honey actually contain the germs of the disease and are left in the hive. If all such combs be removed, extracted, and honey boiled, then I can see how, if the combs be given back, the bees would clean them up and remove the infection.—Ed.]

A SECTION-PROTECTOR.

A Device for Keeping the Sections Clean.

BY J. W. ORMSBY.

I will try to give you a description of the device I have been using this season for keeping my sections clean. First, I use the ordinary section-holder, which prevents the bottom of the sections from being dirty, and then I have cut from zinc a piece the exact size to cover the sections in the super, with the beeway the same as the bottom of the section-holders, which I place on the top of the sections the same as a queen-excluder



should be used. This prevents the bees from traveling over the sections, and consequently all I have to clean is the beeway above and below in the sections, which I trim with a very sharp knife.

To remove the sections from the super, proceed in the ordinary way. Knock out the wedges and upset the super on a bench or table, and the section will come off easily, and this prevents the protector from getting kinked or bent, as it comes off last. In using this we can leave the sections on any length of time, and they can't be soiled.

Bonsall, Cal.

J. W. ORMSBY.

[This method of protecting the tops of the sections is not new except in the use of metal instead of wood. In the case of the section-holder, nothing thicker than zinc could be used. The objection to this and any other like arrangement is the fact that sections will shrink and swell under varying conditions, getting the opening to the sections out of register with the openings in the zinc board; and unless the zinc lies perfectly flat, and in perfectly tight contact with the top of the sections, there will be strong red streaks of propolis along the edges and between the metal of the sections. In my opinion a far better arrangement is a single-tier wide frame having a top-bar and bottom-bar corresponding with openings in the sections. The shrinkage in the case of one top-bar covering a single row of sections would be very slight; but a very small swelling in the size of the sections with your arrangement would result in the outside rows being out of alignment with the openings. — Ed.]

PRODUCING COMB AND EXTRACTED HONEY IN THE SAME SUPER.

Laying Workers; Grading Honey.

BY A SOUTH GEORGIAN.

My plan of producing comb and extracted honey in the same super is the same in principle as the Townsend. It was original with me, as I hit upon it by accident. I had transferred a box hive, and had enough comb to fill 15 Danzenbaker frames, so I put ten combs in the lower story and five in the top one; and to fill out the empty space I put in sections. The bees filled these sections quicker than I had ever seen sections filled before, and this set me to thinking. I decided the *ready-built* combs at the side of the sections had given the bees the "upstairs fever." I now put an extracting-comb (Danzenbaker shallow) at each side of the super, and filled in the space between sections. If the stock is a weak one it will also pay to put a comb in the middle of the super, putting it nearer to the colder rather than nearer to the warmer side of the hive. I am satisfied the bees work with twice the vim with this plan than without it. It has, however, the objection Mr. Green made to it, i. e., the sections are harder to clean of propolis by this plan. I use the one-sided fences suggested by the editor, to prevent the combs from being attached to the fences. The objection Mr. Green makes is, I think, overbalanced by the better-filled sections.

I used successfully the same plan of increase as the Alexander before I saw it in print. It, too, was original with me.

Although I have no black brood nor foul brood, as I know of neither in Georgia, I read Mr. Alexander's article with interest. I hope his plan will work; but, as he says, make the bees *queenless* for twenty days. I want to ask a question for the benefit of others who might not think of it. In the A B C book, Mr. Editor, you tell us not to al-

low a colony to be queenless more than *ten* days if we don't want to have laying workers. Would not laying workers defeat the object of having the bees queenless? I wonder if Mr. Alexander had any laying workers in any of the great number of queenless colonies he had under the treatment. Laying-worker colonies are bad things to manage. I had one the past season. I would have tried the plan of grafting the cells they kept starting, with larvæ from my breeding queen, but I am not steady-handed enough to handle such delicate propositions and be successful; so as an experiment I took some strips of comb with fertilized eggs in the cells, and stuck them on the *outside* of a division-board feeder I had in the hive, and, presto! they reared them a queen that has restored the colony to normal strength, from those strips, when previously they would not start cells on combs of young brood and eggs placed in the hive. Some may say I am mistaken about this, but I am not.

The past season two of my colonies reared queens from eggs that produced 90 per cent of five-banded bees, and the bees of those queens are all uniformly marked with three orange-yellow bands, yet I have reason to believe that these queens were mated to black drones. Is it possible that queens reared from five-banded stock, if mated to black drones, will produce all three-banded bees? The reason I think the queens mated to black drones is because their bees are much "sassier" than the bees of their mother, and run like blacks when the hive is opened.

Does the Danz. $4 \times 5 \times 1\frac{1}{2}$ section hold a full pound with you? It would have to be filled by pure Cyprians or Holy Lands, and grade "extra fancy" to weigh 16 oz. here. Equal amounts of fancy, A No. 1, and No. 1 will not average over 12 ounces to the section here. Perhaps you may think I have made a mistake in the grading. No, I have studied carefully the rules you give in GLEANINGS for grading, and know I have not made a mistake. It seems to me a "pound" section ought to weigh 16 oz. when filled; but if it will not increase the price paid to producer any to have it so, I do not care to have it do it.

Glenville, Ga.

MERITS OF THE HOFFMAN FRAME.

Some Points in Mr. McGregor's Article Considered.

BY C. E. WOODWARD.

On page 1127 appears an article written by Mr. Alpine McGregor, entitled "The Hoffman Frame." After a careful reading of said article I was very much surprised to learn that it has taken him all of these long years to learn that it is far inferior to the old hanging frame. If the frame is as bad as he says it is, why should he not have found it out sooner? If said frame is good for the farmer it must be equally good for

the beginner; and if this statement stands true it must also be good for the expert bee-keeper, of which all is true. Mr. McGregor states that he has been using them ever since their introduction by the Root Co., except the two last years. Now, how much cold cash do you suppose he has lost on the use of this frame? I too have used this frame ever since it was put out to the bee-keeping public. I used them by the hundreds in the United States, and have used them by the thousands here in Cuba. I have built up over 4000 colonies in this country on these frames, and I confess that I have no desire to be rid of them till I can find something better than the old hanging frame to replace them.

I admit that the Hoffman frame does not suit me in all respects; but I shall stand by the Hoffman until I'm sure I have something better for those who are not satisfied with it because their locality is so bad for propolis.

I know a very good spacer is the one which I describe on page 1249. The points of bearing are so small that the bees have not room to place enough propolis to cause the spacer to break. The great trouble with the Hoffman frame is that most of the bee-keepers have not yet learned how to nail them up properly and use them as they should. It is a well-established fact that the most of the propolis is always at the tops of the frames and hives; hence the breaking-off of the spacers. But do not all kinds of frames break sometimes through manipulation? I find that all kinds of frames will sometimes break.

In my judgment the proper place for spacers is on the top-bar; and your correspondent is at the present time working along that line, but without using nails or staples, for they are not suitable for the up-to-date apiarist.

Matanzas, Cuba.

A STEAM-HEATED HONEY-TANK.

Steam a Necessity in a Large Apiary.

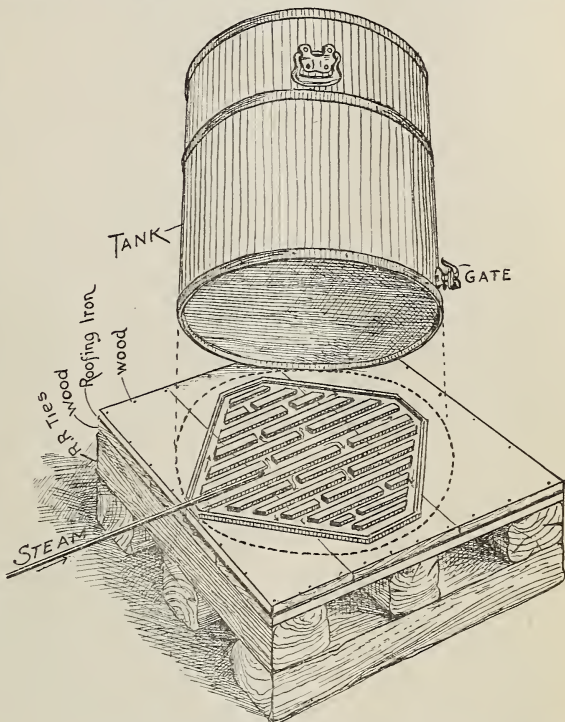
BY E. F. ATWATER.

Perhaps a description of our tank might be of interest to some, especially those who are putting up honey in the Aikin bags. No matter how long our thick honey may stand, all specks of wax and other impurities will not come to the top. Soon after filling the tank therefore (our first tank holds 4500 pounds), we arrange to heat the honey to perhaps 140 degrees. The tank stands in the unbroken sunshine, and is painted a dark brown, to absorb as much sun heat as possible. The cover is of the same color.

The tank rests on a platform, raised about

18 inches. The lower layer of boards is covered with some old flat iron roofing. On this is another layer of boards. On this platform short strips of 1x2 are nailed, leaving open spaces, as shown by the cut. Around the outside, strips of one-inch stuff are nailed so as to fill the open spaces except at one place, where the steam is to be introduced.

Now, with your tank full of honey resting on the waffle-iron platform, introduce your steam and keep it there until the honey is heated to your satisfaction. If you do this on the morning of a bright sunny day, by night you can skim off all impurities. So long as our honey can circulate freely, there



is no danger of overheating until the mass is hotter than 140 degrees. If *your* honey is different in this respect, I suppose you will need a more expensive tank, with double bottom, to contain hot water. Some may not have steam available, but the extensive bee-keeper *should* have it, for wax-rendering, cleaning cans, foundation-making, etc. We have an old boiler that cost us about \$10. It is not necessary to carry more than 15 pounds of steam, though more is sometimes convenient.

Meridian, Idaho.

[This arrangement is very simple; and where one can get a jet of steam cheaply, probably there can not be anything better. But I imagine that the majority of bee-keepers would not be fortunate enough to be able to purchase a second-hand boiler for \$10.

A farm boiler can be purchased for perhaps \$25. In the absence of anything to furnish steam, the arrangement next shown by A. J. Burns would be very satisfactory.—ED.]

WARMING HONEY IN A LARGE TANK

B the Use of an Oil-stove.

BY A. J. BURNS.

I have read with interest Mr. Greiner's method of warming honey, page 597, and quite agree with him on the desirableness of warming honey before being drawn from the tank. We used to have a saying back in Ohio, "Slow as molasses in winter." I found that honey, thick as mine is, is so slow, even in this warm country, that my patience ran out long before the honey would; and while my honey goes through a screen with meshes six to the inch in the bottom of the extractor, to keep chunks of comb out of the pipe that conducts the honey into the tank in the basement. As it leaves the pipe it passes through a fine wire screen, thence through a pretty heavy cheese-cloth before it drops into the tank; and even then enough particles of comb go through to cloud the honey very much, and it takes a number of days standing to bring all this to the top. Three or four years ago I finally hit upon a plan that I like better than Mr. Greiner's, which is shown in the accompanying drawing. Mr. Greiner's tank, when full, weighs 400 pounds; mine, when full, weighs 4000, which weight must have a solid, smooth bottom to rest on.

[The plan of your honey-tank to be heated with hot water is excellent, although I must say that I am surprised that so small a stove would be capable of heating or warming up 4000 lbs. But if you have tried it, and it works (and I have no reason to doubt your word), then any one else can safely make one like it. A honey-heater like yours, or the one illustrated above, would be a very valuable adjunct to an apiary, especially where large crops of honey are produced. Generally speaking, an oblong or square tank is much more expensive to make than a round one of the same capacity. The same method of heating could be applied to a round tank as well as to one oblong like the one here shown.—ED.]

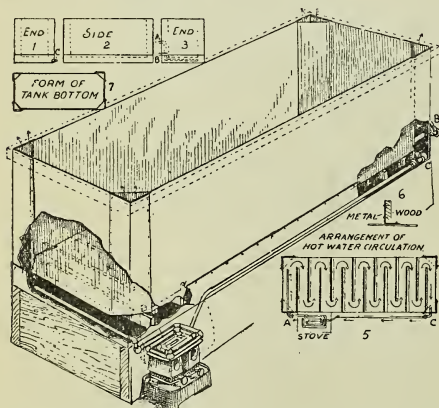
A GOOD HONEY-STRAINER.

Honey-evaporating Tanks; Importance of Not Extracting too Close; a New and Enlarged Building.

BY E. W. ALEXANDER.

This is one of the handiest and best strainers that was ever used for straining honey. A tin-smith can make them by cutting off the top of a stout tin pail 2 inches, then make a frame of folded strips of tin, soldering these strips to the top rim of the pail you cut off, then line the inside of this frame with the same fine copper wire cloth that is used for milk-strainers, and you will have a strainer that will never clog or run over, as the honey can run through the sides all around as well as the bottom, and it will take out every particle of foreign matter from your honey, and with proper care will last a lifetime. I now have three that I had made over 25 years ago and they are apparently good for 25 years more. The way we use these strainers is this. Our honey-tanks are covered with sheeting except about two feet at one end; this has a board on with a hole cut in the center that will let the strainer go down through as far as the rim that has the wire cloth fastened to. Then the pipe that conveys the honey to the tanks has an elbow on, that we turn down over the strainer. This conducting pipe is made in sections about 12 feet long, of heavy tin, and has a bore of about 2 inches. We keep it painted on the outside to prevent rusting. Now when all is ready we start the extractor and our honey is delivered and strained into the tanks and we don't have to pay any attention to it whatever. This way of handling large quantities of honey is one of the corners we must cut which I spoke of in my last article.

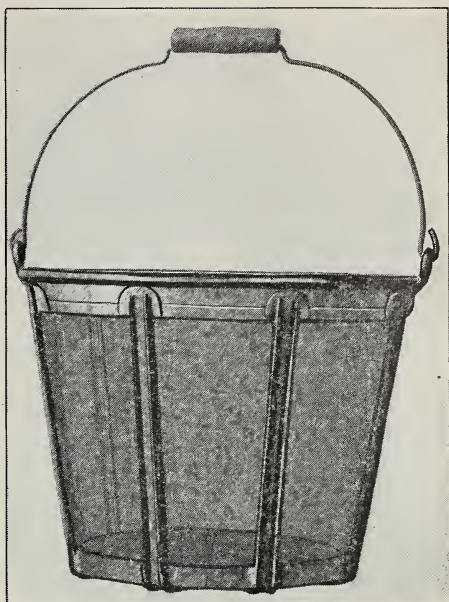
Now in regard to these buildings you saw in last issue. They are cheap and movable, put together with iron bolts, and were used years ago in our out-yards, when I had that foolish idea that, in order to get good results from our bees, it was necessary to have them scattered around the country, in apiaries of only about 100 colonies in each. But



I heat with hot water, which almost entirely obviates the danger of burning or over-heating. In brief, my tank has a double bottom in which are arranged a series of partitions, which, in connection with a coil of pipe outside the tank, under which I put a wickless oil-stove, I keep a current of hot water passing continually between the bottoms, much upon the plan of a water-back and pressure boiler used in furnishing hot water in houses, but I don't need the pressure boiler.

Lusardi, Cal.

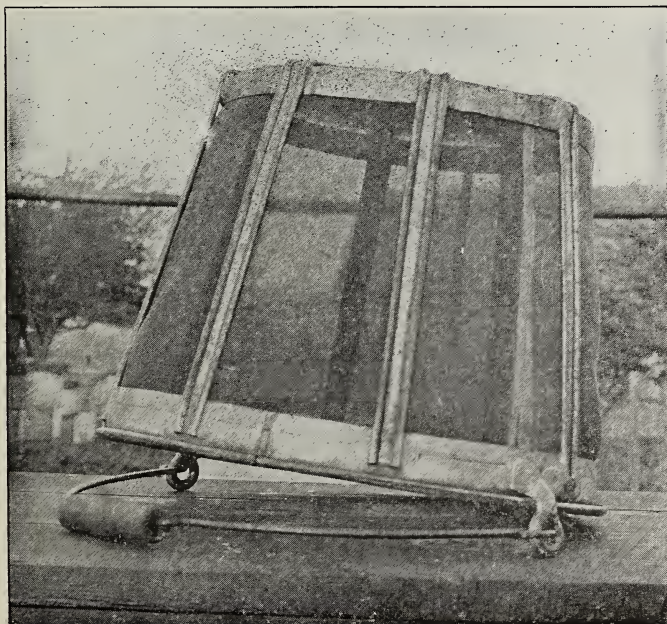
to return to our subject, here is the matter of winter stores for our bees which is one of great importance. It is so easy to take their honey from them with the extractor that many inexperienced bee-keepers frequently take too much from their colonies, thinking they will gather enough later on to carry them through the winter; but often the harvest closes sooner than we expect, then you are in a bad shape, with a large number of light colonies on hand and no honey coming in. I have been right there and know what it is to be caught in this way. In order to avoid light colonies in the fall, let your bees fill up their hives with the first honey of the season, and see they have a plenty of it capped over before you put on your extracting-supers. It is so natural for them to store their honey above their brood, that, unless you take especial pains to see that they have a nice lot of capped honey in the lower hive, before you commence to extract you will be liable to have many light colonies for winter. We always save when extracting some nice heavy combs of capped honey to give any light colonies we might find shortly before putting them away for winter. Now as some of you have recently seen photos of our apiary, I wish to tell you of the changes we have just made. First, we have removed several apple-trees from the bee-yard, as we don't like any shade among our hives. Then we have taken away those small buildings, and in their place we now have a fine building 24X56, which has a good cellar under it that will give ample room to winter 1000 colonies. In this building we can store all our extract-



HONEY-STRAINER PAIL—TOP VIEW.

ing-combs and, in fact, every thing connected with an apiary of 1000 colonies, including all the necessary barrels to hold their honey. It is two stories high, which gives us a chance to use the pipe again to convey our honey from the extractor to the tanks which we value so much. We thought we

had some things quite handy before, but now it will not require more than half the labor to handle our honey that it has in the past. And now, my friends, I hope that you have seen something in these two articles on extracted honey that will awaken a new interest in you toward your bees; for surely if we expect to produce large quantities of either comb or extracted honey, we must have every thing as convenient as possible, for, to a certain extent, we are in competition with those immense sugar-refineries where millions of dollars are invested; and in order to hold our part of the trade, and bring honey into general use, we must cut corners here and there and everywhere so that we can produce honey cheaper



E. W. ALEXANDER'S HONEY-STRAINER PAIL.

in the future than we have in the past. Think it over between now and spring, and then with renewed energy and perseverance push bee-keeping in whatever part you have chosen until you stand well forward in the line of progress and improvement. Hoping you have your bees well cared for, and that they will go through the winter in good condition, I will close by wishing you all a prosperous New Year.

Delanson, N. Y.

[The buildings containing the two storage-tanks mentioned by Mr. Alexander in our last issue are shown in the middle background of the accompanying half-tone seen just below. I endeavored to get an interior

a strainer outside of an extractor. The wire cloth is the finest mesh brass procurable, and will strain out every particle of dirt. The great difficulty with ordinary honey strainers is that they do not present a large enough surface of straining material to the honey. Too many of the strainers have a horizontal surface which soon clogs with sediment and dirt. The Alexander pails are perpendicular as well as horizontal wire cloth, and for holding large extractings at a time these pails answer perfectly. Of course, they gather up refuse, and the strainers begin to work slower; but the pails are so easily dumped and cleaned that this really is no objection.

I have asked Mr. Alexander to give us a



A PART OF THE ALEXANDER APIARY WITH THE HONEY-STORAGE BUILDING WITH THEIR EVAPORATING-TANKS IN THE BACKGROUND.

view of the building showing the tanks, but was unsuccessful. These tanks are oblong, and, as nearly as I can remember, 4 ft. deep, 4 or 5 feet wide, and 10 or 12 feet long. They present a large amount of surface of honey to the air for the further ripening of the honey. As the buildings are small inclosing them, a great amount of the sun's rays is absorbed, making the room itself hot where the honey is. It is very thick when it comes out of the combs, but is made thicker still by standing in this building after storage.

I witnessed the work of these pail strainers, and must say that, in my opinion, they are the best thing I ever saw in the way of

picture of his new extracting-house. This he will probably do, and describe it more fully in a later article, although I must confess to a feeling that the little building which he has now discarded strikes me as being one of the most unique little structures for extracting I have ever seen. For out-yard work I can't conceive of any thing more suitable.

In our next issue Mr. Alexander will describe his method of taking off the honey from the hives; how he carries the combs to and from the building, and, in short, how he makes it possible to get along with so small a structure in the handling of so many colonies.—Ed.]

A YOUNG QUEEN-BREEDER.

BY F. A. LOCKHART.

I am mailing you a picture of the youngest queen-breeder in the world so far as I know. This very young queen-breeder, Lester C. Lockhart, was born June 23, 1901; and ever since he began to walk he has been among the bees with me, and seemed to take great interest in them. This summer, on his birthday, I gave him seven small hives of Carniolan bees, and told him he could have all the money for the queens he would catch and cage from these hives (by the way, he has quite a little bank account of his own). Of course, I was careful to show him how

HONEY EXHIBITS AT FAIRS.

BY WM. E. PRISK.

Inclosed is a photograph of my exhibit at the Wisconsin State Fair. They say it was very fine, and I received many first premiums. The four corners are all glass filled with 4×5 sections of honey. In the center of the pillars, on a table, are 7 dozen bottles of pure white-clover extracted honey. The arch is painted white, and has four kinds of bottled honey and four different kinds of packages. Right back of the pillars are two tables which you can not see. One table has 11 dozen bottles with twelve kinds of honey. The other table has three different



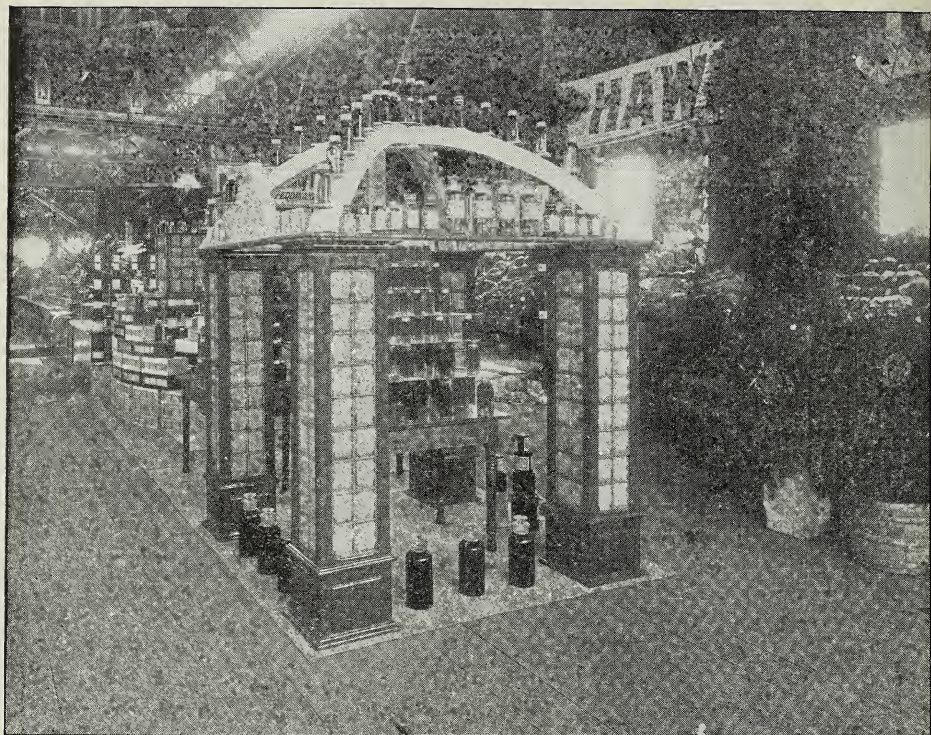
THE YOUNGEST QUEEN-BREEDER IN THE WORLD AND HIS BEES.

to open a hive, take out a comb, look for a queen, and how to catch her and the worker bees and put them in the cage, etc.; and before the season closed he became quite an expert considering his age. In the picture he is telling the artist how to catch and cage a queen. He gets stung once in a while, but doesn't seem to mind it much. The seven small hives of bees were made from one strong colony of the gentlest Carniolans I ever saw. No smoker and quite often no veil are used when opening hives. I trust this very young queen-breeder will soon tell the readers of GLEANINGS, in his own childish way, what he knows about his little pets.

Lake George, N. Y.

kinds of honey in round pyramids. Next to the tables are three square glass show-cases on top of each other. The bottom show-case has four perfectly filled and capped extracting-frames, large frames, and also four shallow frames. The rest of the case has sections weighing 2 lbs. up to $\frac{1}{2}$ lb. The next show-case has all the different kinds of sections. The top case is full of $3\frac{3}{8} \times 5 \times 1\frac{1}{2}$ sections.

Next comes the shipping-cases, 80 in number, 24-lb. cases, painted in blue and natural finish, also grained in oak and mahogany, equal number of each. On top of the cases is a show-case filled with different kinds of comb honey. Next came the honey-cans,



A FINE HONEY EXHIBIT AT THE WISCONSIN STATE FAIR BY WM. E. PRISK.



CREIGHTON'S EXHIBIT AT A LOCAL PICNIC.

from 5-gallon up to 1-lb. cans. The cans are painted blue, red, and yellow. Next came sample cases of honey and bees which you can not see. Every thing was grained in oak and mahogany, giving it a fine appearance. I had about 4500 lbs. of very fancy honey, about equal parts of comb and extracted. They gave me a fine place in the center of the agricultural building. All sample cases of comb honey were in $4 \times 5 \times 1\frac{3}{8}$ sections. The 80 cases were of all kinds of sections, and, though I use all kinds, I prefer the 4×5 . All sections were perfectly filled, weighing over 15 oz. each.

Mineral Point, Wis., Oct. 9.

ADVERTISING BY MAKING EXHIBITS AND TALKING BEES.

BY J. G. CREIGHTON.

The photo I am sending you is taken from an exhibit I made Aug. 26, at a local picnic. My left hand is on an extracting-frame of honey. I had this in a glass case so it would not attract the attention of the bees in the neighborhood, and so keep the people away from the exhibit, for I wanted them to ask me questions about this frame of honey. I would show them the extracted honey in the bottles, and explain to them how we took it from just such sealed frames of honey. The most attractive part of the display was the one-frame observatory hive of golden Italian bees, with square sections, so I could explain to them how we produce comb honey. I could show them the mother of the bees, in the act of depositing eggs in the cells; also the larvæ, and bees hatching out of the cells. All were much interested, from the children to the old people. I had also three cakes of beeswax on a case of 2-lb. sections of honey. I put up these 2-lb. sections for the occasion, as I think that they make a better appearance than the smaller section. I am one of those who believe it was a mistake to do away with the larger sections, for I can produce more honey with them than I can in smaller sections; and in our county I can sell just as much of it.

In front of me are seven bottles of extracted honey and a cake of beeswax on a case of $4\frac{1}{2}$ sections of honey. Over half of the people who looked at the beeswax did not know what it was, and soon began to ask questions, "How do you make it? and what kind of molds did you mold it in?" I explained to them that I melted it by steam, and put the molding on top of it by running it hot into a vessel of cold water.

I believe that, by making these exhibits, we can build up a home market for our honey, and will not have to put it on to the market at wholesale prices. But it will not do to put your exhibit on the stand and then go off and leave it, as many do. You want to stay with it, and answer questions, and talk bees and honey.

Harrison, Ohio, Oct. 10.

[Bee-keepers for the next few years will realize the importance of advertising their business at all large public gatherings. Just now there is no more interesting subject to the general public than bees and the production of honey. Popular demonstrations with live bees in connection with exhibits, as described by our two correspondents, will have a very strong tendency to stimulate the local market for honey. I expect to preach this doctrine clear up to fair time, and even after that time if it be necessary to get our brethren to realize what they can do in the way of advertising *their own business* and nearly doubling their net returns. What is the use of sending every pound of honey to the city, where markets are liable to be glutted, when you can keep that same honey at home, save the freight on it, commission, drayage, and breakage, and get practically double prices? But, more anon.—Ed.]



QUESTIONS CONCERNING ITALIAN BEES AND DISEASES OF BEES AND CATTLE.

1. Is it a fact that most of the Italian bees resist bee diseases? Are there very many instances where the blacks have had foul brood? My bees have something very serious—either pickled or black brood. The dead larvæ, in some cases, rope slightly, and have the smell that foul brood is said to have, resembling black brood a great deal. I have had several colonies that had the disease, that showed scarcely any healthy cells in the hive. The Italians I had, that were pure, did not have the disease enough to hurt them seriously for the honey-flow.

2. I am thinking of moving my bees up close to the pasture fence. Would the cattle and horses learn to keep away from that side of the fence when the bees are cross, or would there be danger of the animals staying by the fence and being stung to death?

3. Are the Italians inclined to sting a few feet from the hive when working heavily, and unmolested, as the hybrids are apt to do?

4. Is straw a good packing material? I had six hives in a shed last year, four inches apart, packed tight with straw, with the result that they wintered very poorly. The bees faced the south, and were kept dry. Were they packed too closely, or what was the trouble?

EDGAR WILLIAMS.

Pierpont, O., Nov. 1.

[1. The reports from York State show that black bees are much more liable to con-

tract black and foul brood; and after having once gotten the disease are more liable to succumb to it. From your description it is apparent that you have either black or foul brood. I would advise you to try next season the Alexander cure, which cure might also be effective in the case of foul brood.

2. If you own the pasture and the cattle, there may be no objection to your moving the bees up to the fence line; otherwise I would not do it. Sometimes in the height of the honey-flow, when the bees are flying strong and low, they will attack cattle, but usually not enough to do any serious damage. If there is a hedge fence six or eight feet high, you could put your bees as close to the line as you desire, for that would compel the bees to fly high to get over the fence. The cattle or horses would not learn to keep away from the fence even if the bees were disposed to molest.

3. It is well known that Italians are much gentler than hybrids. Any bees in the height of the honey-flow, if their line of flight is interrupted close to the entrance, are liable to sting. Probably hybrids would be worse in this respect than Italians.

4. Straw is a fairly good packing material, and there is no reason why you should have lost your bees unless the fronts of the hives were exposed to the prevailing winds, and the entrances were too large. For outdoor wintering, especially when the hives face the north, I would not have the entrances larger than 8 inches wide by $\frac{1}{4}$ deep. In the case of weak colonies the entrances should be correspondingly smaller. Along toward spring, with a hooked wire rake out on the first warm day all dead bees that may be clogging up the opening. For this you will probably need the assistance of a smoker to prevent attack.—ED.]

SWEET CLOVER AS A FORAGE-PLANT IN ALABAMA; AS A LAND-RESTORER IT HAS NO EQUAL.

We grow a great deal of sweet clover here; and after reading what has been said in GLEANINGS I inclose a few facts concerning it in this section. They may not be worth publishing, yet they may show forth some of the good points of sweet clover, which have been doubted by so many.

After reading the articles on pages 1120 and 1121 concerning sweet clover I have come to the conclusion that those people who speak against it haven't tested far enough to learn the many redeeming qualities of sweet clover outside of a remarkable honey-plant.

As a whole this section of country grows a large quantity of sweet clover, or melilotus, as we call it. In the first place it was sown on waste places to redeem the land. As a land restorer or enricher it has no equal here. Then the cattle-men began to see and learn of its value for pasture. There is no grass or clover here that fattens cattle so fast as sweet clover does. A cattle-raiser informed me the other day that people had

told him that it wasn't sweet clover, but Johnson grass, that fattened his cattle. "But," said he, "I noted that my cattle didn't gain so rapidly after the sweet clover had gone."

It makes good feed when cut at the proper time, and the stock relish it very much, leaving their other hay to seek out every spear of sweet clover, and eating even the coarse stalks.

But right here, in my best judgment, is where the good qualities of sweet clover have been overlooked. Sometimes, if not quite often, when stock have not been raised on sweet clover they have to learn to like it; but after once learning they never cease to make use of an opportunity to help themselves to the once distasteful stuff. I have known of horses that, when first brought to this section, wouldn't eat sweet clover at all; yet in a short time they had learned to like it so well that, if turned out to graze, you would see them leave all other grasses and seek out a green plot of sweet clover, there to feed on their choice of the field.

I can not speak for other sections of our country; for no doubt soil, climate, etc., make a great difference; but here in our lime land sweet clover is fully appreciated and much valued as a feed, pasture, and land-enricher. A. B. BROWN.

Sybil, Ala., Nov. 14.

[This only confirms hundreds of other testimonials we have had. It is indeed a travesty on modern legislation that in a large portion of the States of this Union there are laws classing sweet clover as a noxious weed, and requiring its destruction along with the weeds just when it begins to yield nectar. We have a pamphlet on the subject of sweet clover, which we send out free to bee-keepers to hand out to their farmer neighbors; and they should make an effort to have the law, or that portion of it classing sweet clover as a noxious weed, amended. The time will come when farmers will be growing sweet clover on their farms the same as they grow timothy. When that day arrives, our annual honey-yields will be materially increased.—ED.]

THE CUSTOM OF BEATING TIN PANS, AT THE ISSUING OF A SWARM, ABOUT 2300 YEARS OLD.

Hands across the sea! Pass on the handshake to my fellow-teacher Professor Bigelow, and tell him that Alfred the Great is not in it. Away back at the dawn of the Christian era Pliny wrote, "To cause a swarm of bees to settle you must strike on brazen vessels." Claudian, fourth century; Virgil, 70 B. C., and even Aristotle, 384 B. C., mention the playing on "vessels of brass" as a custom universally prevalent. Ovid wrote, probably about the year 1, "They report that honey was discovered by Bacchus. He was proceeding from the sandy Hebrus, accompanied by the Satyrs, and they were come to the flowery Pangæum, when the cymbal-bearing hands of the attendants gave

forth a clang. Behold, impelled by the sound unknown winged creatures swarm together, and the sound which the brasses produce the bees pursue. Bacchus collects them as they flit about, and shuts them up in a hollow tree, and he has his reward in the discovery of honey.

Ovid was a contemporary of Christ; but the worship of Bacchus was introduced to his country more than five hundred years earlier, so that we may presume the tradition of "tanging" is of that age at least. This presumption (if not certainty) is confirmed by the fact that Aristotle draws several of his facts and statements avowedly from the writings and observations of others who lived before his time.

Alfred the Great was born in 849 A. D. Tanging was known to bee-keepers about 1400 years earlier.

Banff, Scotland. D. M. MACDONALD.

A BEE AND HONEY EXHIBITION.

I notice Mr. Morrison's communication in GLEANINGS for Oct. 15, suggesting a show of bees, honey, and supplies, and referring to the horse, dog, poultry, and pigeon men as being active in that way. I would suggest that Boston, with its large local population to draw from, is a good place for a nucleus. I am personally well acquainted with the detail of the various dog, poultry, and pigeon exhibits held here for a number of years, and I am also interested in various shows of these fanciers on both sides of the water. There is a great deal of work in their preparation. I am engaged now on the preliminary work of the Boston Terrier Club specialty show, which has become an annual affair. The New England Kennel Club holds annual dog shows here, usually at a profit. This club made a good-sized profit last year. The poultry people did not have an exhibition last year, but I understand one is on the tapis for Jan., 1906. There are numerous shows of these fanciers in our near-by towns and cities, one of which is passed through about every 15 minutes on the cars, and I think that, by judicious advertising, such as has been done by the fanciers referred to, the public could be interested (the big population of our suburbs I mean); and if such a show were held after due publicity is made through the city and local press, there would be a good show of attracting the public where and when they could be educated in the mysteries of eating honey, for that is the main question; and it is so often that I am asked, "How do you eat it?" that I have frequently to demonstrate.

JAMES M. PULLEY.

Boston, Oct. '23.

[The A. I. Root Co. has already been testing this matter in the city of New York. We made an effort to get into the Madison Square poultry show, but did not succeed. Another and a smaller one we did get into, and there gave daily demonstrations in connection with a stereopticon and moving-picture outfit. The results showed that there

was no better way to advertise honey to consumers who need to be informed of the facts after they have had their heads crammed with newspaper and cyclopedia lies about the honey business. Local bee-keepers, where rightly situated, should make an effort to get into the poultry shows with their bees and honey. But be sure to convince the management that no "bees will get loose to sting the chickens and the dogs."] □

With regard to Boston, I would suggest that you confer with Mr. F. H. Farmer, who represents the Root Co. in that city. Possibly he could be induced to make an exhibit another year. We shall, of course, be glad to assist.—Ed.]

A CEMENT HIVE-STAND; JAPANESE CLOVER AS A HONEY-PLANT.

Next year, for hive-stands, I intend to make frames about three feet square, and dig out enough so that I can sink them just about level with the earth. Then I'll take one part cement to five parts of sand, mixed to a mortar, and pour it into these frames and scrape it off level with a straight-edge. Two hives will then rest on each stand. The idea of this is that, when the hives are set on, no grass can come up within six or eight inches of the hive; and the cement, being level with the earth, a lawn-mower wheel can run right over it and get every sprig of grass and still not bump the hive.

Will bees work on Japanese clover if they have nothing else to work on? It is everywhere here and in full bloom, and I have never been able to catch a bee on it.

Overton, Tex.

C. A. STILL, JR.

[Your concrete hive-stands would be excellent but somewhat expensive. Four bricks would be almost as good, and a great deal cheaper; or, better still, four wooden stakes a foot long driven into the ground. These should stick up just high enough to support the bottom-board square, letting it tilt forward slightly.

I do not know much about Japanese clover. Will some subscriber please inform us? —Ed.]

A REMARKABLE YIELD FROM A COLONY ON SCALES.

Since locating here I have become so interested in growing citrus fruits that my groves of several kinds of orange and lemon trees take most of my time; but I can not be content without bees, and have an apiary of 240 colonies located between the orange-groves and sage-covered hills.

I have practiced keeping a record of one good colony on scales for the past thirty years, and this year breaks all my records for duration of yield — six months constant yield — April 4th to October from orange, button sage, white sage, and wild buckwheat; total gain, 481 lbs., also greatest gain for one week, May 11 to 17, was 12, 12, 15, 22, 24, 14, 16 lbs.; total for week, 115 lbs. from a colony confined the entire season with zinc excluder to eight Langstroth brood-combs and 16

to 24 extracting-combs. I have no swarming. The flow was very heavy from orange, but most of it was lost, as most colonies were not strong enough to store so early, and weather was unusually cool in April, so my general crop is only fair.

Redlands, Cal., Oct. 14. FRANK MCNAY.

HOFFMAN-FRAME TOOL; PROPOLIS, HOW TO KEEP IT OFF.

I have long wanted to say something about the discussion on the Hoffman frame. A very important factor has been neglected — that is, the proper tool to use in connection with them. I believe it was described in GLEANINGS once or twice before. It is simply a pryer and hook made of the narrowest piece of seat-spring steel you can get. Hammer and grind sharp one end; draw the other in the form of a shank like that of a large file; have the end $\frac{3}{8}$ in. wide; turn square, also $\frac{3}{8}$ of the end; file it sharp, chisel shape; let the whole tool be 10 or 12 in. long. Such a tool will promptly fetch them out for me, and also most conveniently, no matter how much glued. When much strength is necessary, use the wide end; otherwise insert the hook end between the frames to pry apart; then push the hook underneath the end of the top-bar furthest from you, holding the nearest end with the left hand. I have used the Hoffman frames ever since you put them out, and like them well.

When you work in propolis time or localities, do not forget to grease your hands. It is much easier to keep propolis off the hands that way than to wash it off when once on. The wide end is specially to pry apart hives-stories.

A. MOTTAZ.

Utica, Ill., Nov. 7.

[There has been considerable said in these columns about different solvents for removing propolis, but very little comparatively regarding satisfactory methods for preventing this deposit on the fingers. Last year one of our correspondents did mention that a little oil on the fingers would prevent their being soiled. There are certain seasons of the year when propolis is abundant; and if grease of some kind will do the work, by all means use it. If any of our subscribers have had any experience I should be glad to have them tell us about it.—ED.]

LARGE HIVES; DESTROYING A PART OF THE APIARY TO KEEP DOWN INCREASE.

I am an amateur in bee-keeping, but have been an attentive reader of your journal during the past year. There are one or two points I should like further light on. First, to what extent are very large hives efficacious to prevent swarming? More honey and less trouble — that's what we all want. Why, some years even the veterans up here leave swarms hanging on trees because every old hive, keg, and box on the farms full. One man last fall had increased to 100 stands; killed 70 and wintered 30. This year he has but 70 in all — 40 to kill.

Very few in this vicinity care to winter more than about ten stands, on account of the time and attention required to handle the increase.

Another question I am after information on is the distance bees will work from their hives. Most people, I believe, claim three miles or thereabouts. One of your correspondents, however, argued half to three-fourths of a mile only. The latter strikes me as correct.

A. M. COLWELL.

Waconia, Minn., Oct. 26.

[It is too bad to see such a wholesale destruction of bees. Some enterprising bee-keeper in the vicinity should buy them cheap. You had better do it yourself, and sell them to your bee-keeping friends at a profit. Do not let any "old-timer" destroy good property like that.

Large hives, when run for extracted honey, with proper management, will prevent swarming almost altogether. The Dadants, with their large Quinby hives, have, I think, not to exceed over two per cent of swarming in a season. For particulars you are referred to "Hives" and "Swarming" in our A B C of Bee Culture.

The distance bees will fly in quest of stores varies according to the locality. The average flight is not much over a mile and a half, although they will often go three miles. In our issue for Dec. 15 I pointed out how the Alexander bees would go five miles. Bees will often fly across a valley or across a body of water further than they will fly over level ground more or less covered with woods and underbrush.—ED.]

SOME OF THE HONEY-PRODUCING PLANTS OF EASTERN NORTH CAROLINA.

On page 1031 Mr. W. R. L. Dwyer, of Hillsboro, Ohio, wishes to know some of the honey-producing plants of this section, the usual production per colony, length of honey-flow, and quality of honey.

In answering Mr. Dwyer's questions I am sorry to state that modern bee-keeping in this section is in its infancy, so I can not give him the exact information on the average production per colony, but I should say about two supers per colony. I hived a swarm this spring in a Danzenbaker hive on half-inch starters, and in five days the brood-nest was two-thirds full of snow-white honey; but before the bees began work in the supers that flow gave out, and since then there has been scarcely any flow at all.

Fully a third of the bees in this section have died from starvation this year — something which has not happened before in years. All of my weak colonies died in spite of all the feeding I did, the web-worm eating up the comb. Such a year as this, I have been told, has never been experienced before. One bee-keeper in another section says, "We are about to lose the seed of bees over my way."

The general quality of honey here is well flavored, thick, and what I should call amber, although the whitest honey I ever saw

came from this section. It was snow-white, and came from the highland black gum.

The honey-producing plants and trees here are as follows: Maple, holly, gallberry, poplar, black gum, hickory (honey dew), fruit-trees, corn, cotton, cow-pea, blackberry, goldenrod, grape, persimmon, plum, strawberry, sumac, watermelon, squash, pumpkin, and cucumber. Some of our large truck-farms afford quite a field for the bees during the trucking season.

Currie, N. C. G. W. CORBETT, JR.

PLACING A STORM-DOOR OVER THE ENTRANCES OF COLONIES WINTERED ON THE SUMMER STANDS.

After bees are properly fed in September, and packed with four inches of forest leaves, I find it a good plan to place a small box, open at one side, about 6×6 by 18 in., over the entrance. This keeps out the snow, and provides a place where the bees may carry out their dead. It also gives them plenty of air. No matter how deep the snow, it always works satisfactorily. For the last eight years I have removed the snow in spring to let the bees fly if necessary.

I have some fruit-trees in my apiary, and I find in every case the bees in the shade do better than those exposed to the sun.

Bracebridge, Ont. JOHN BAILEY, SR.

[I am not sure but this storm-door idea is a good one. We proved last winter and the winter before that, if the entrances could be protected with loose straw or snow, bees could be kept warmer in the hive. But the difficulty we encountered was that snow would melt over the straw, freeze up the mass, and sometimes close the entrance hermetically. This generally killed the colony. The storm-door would obviate this, I think. These could be made of small drygoods-boxes that you could buy at stores, at a small cost, or perhaps they could be had for taking them away.—ED.]

BEEES SWARMING OUT WITH A VIRGIN QUEEN.

Mr. Doolittle's conversation in the July 15th number was of special interest to me, for I had just been having a number of swarms come out with virgin queens in the very same manner described by Mr. Muth-Rasmussen. The first cases noticed were from colonies from which all but two frames of brood had been removed in forming nuclei. Some of the bees had left the various nuclei and returned to the old stand. These, together with those left at the time of dividing, made quite a fair swarm. When the virgin, reared from the one or more cells left on the two frames of brood came out for her mating-flight a portion of the bees swarmed out with her. In some of these cases I chanced to be standing beside the hive at the time, and opened it at once. A most careful search failed to discover any eggs, unsealed brood, or queen-cells in the hive. There were only two frames that had any

brood, and this was not only sealed but nearly all hatched. These swarms in question seldom settled (though they sometimes did), and did not remain in the air as long as most normal swarms. In two to five minutes they were all back in the hive. An examination three days later showed the young queen laying nicely. Later in the season I had a number of strong colonies which had, by repeated attempts at swarming, lost or killed their clipped queens. To some of these, where needed, I gave a ripe queen-cell or a newly hatched virgin. On the fifth or sixth day afterward the swarm would come out with the virgin, then ready to mate. Some of these colonies had no brood of any kind, because so much time had elapsed since losing their old queen. Three or four days after these swarms came out I would find eggs. I have all my hives numbered, and keep a careful record of each colony, and am just as certain that these were genuine cases of a swarm leaving its hive with no means of rearing a queen as I am of anything pertaining to bees. F. L. DAY.

Detroit City, Minn., Nov. 6.

THE GALLBERRY OF THE SOUTH AS A HONEY-PLANT.

The value of this great honey-plant is not known much to the bee-keeping world, and it is placed in the list of minor honey-plants in the bee-books. But it should have due credit for the hundreds of tons of very fine honey it yields.

As far back as I can trace bee-keeping definitely (89 years) it has not failed to yield a crop of honey. It is seen mostly on waste land; and, although it grows only 7 or 8 feet high, it is very thick. The beds never die out, and begin to bloom the second year of growth. It blooms about the first of May (after all cold weather is over), and continues for 30 or 35 days.

I have counted 3000 blossoms on one bush $\frac{1}{2}$ inch in diameter.

Its honey is a very light amber color, thick and pleasant to taste. I have seen but very little granulated, and that was extracted too soon. I have some samples that are very old, and it has not changed in color. This honey is not known much in the North, and perhaps never will be, as there will never be enough raised here to fill the demand in the South. J. J. WILDER.

Cordele, Ga., Aug. 12.

HOW TO WINTER BEES IN DANZENBAKER HIVES WITHOUT LOSS.

This is the way I winter bees on the summer stands in Danzenbaker hives. I take off all supers containing sections about September 1, so that the bees are compelled to place all honey gathered after that in the brood-nest. This gives them ample time to ripen it thoroughly and place it where they want it. I want them to have plenty of stores so that they will be in position to breed rapidly the following spring. The honey gathered from this time on until frost

will be from heartsease, etc.; and as it is dark, it is not as salable as light honey, although just as good for wintering purposes. After removing the supers I place as many thicknesses of paper as I can get (which sometimes is 18 or 20) down between the outside frames and the sides of the hive, folding the paper in such a manner that it extends up several inches above the top of the hive body. I now place an empty super on the hive, lay two sticks about the thickness of a leadpencil across the tops of the frames so that the bees can pass from one frame to the other without going around below. I now place a piece of old well-propolized carpet over the frames and put a good wheat-chaff cushion on this and replace the roof. When cold weather arrives I place an outside box over each hive, with two or three inches of air-space on all three sides as a windbreak.

With this system of wintering I have not lost a single colony in five years with the exception of the winter of 1903, when they ran completely out of stores and starved. I have never had a case of spring dwindling or a queenless colony show up in spring. By this method I have hives fairly boiling over with bees at the first appearance of white clover; and, to be honest about it, I would not give a great deal to have them insured. Nisbet, Penn. GRANT STANLEY.

[The plan here described would, in my opinion, give very good results.—ED.]

IS THERE A NEW ENEMY OF BEES?

I noticed on page 1084 that Dr. Thos. J. Brown, of Tennessee, describes a case of the very same affection I tried to describe to you on p. 1028. The only difference there is, I saw and destroyed a small worm, not much like the old moth-worm, which you said it was. I am still impressed with the idea that we have a new bee-enemy—certainly one I don't remember noticing before, and I have kept bees for quite a number of years. If Dr. Brown had made a close examination I think he might have seen what I saw. Mine attacked a colony of beautiful Italians, and I think it would have destroyed them had I not taken it in time. I have not seen a case of it in my little apiary since. L. L. BROCKWELL. Edlow, Va., Oct. 21, 1905.

[I would suggest that Mr. B. or any one else who has seen these peculiar worms send specimens of comb containing them to the Department of Agriculture, Division of Apiculture, Washington, for examination. If they are not a moth-worm, then let us know what they are.—ED.]

TAR PAPER OVER THE HIVES IN WINTER.

I have put my colonies away in their "long winter gowns," with tar paper cut into squares, and put on top of the hives, and folded down so as to reach below the supers

which contain the cushions. I have done this chiefly to guard against any possible leakage from melting snow, of which we have from two to five feet. I am wintering outdoors. I. D. PEARCE.

Guler, Wash., Oct 20.

[Your plan ought to give good results in your climate.—ED.]

WINTERING TIERED-UP COLONIES.

Kindly tell me how the tiered-up colonies are wintered. I have several. Would it be proper to take off one story, where there are two, and give the queenless one a queen? Hartstown, Pa. J. D. WEST.

[As a general thing a two-story colony can easily be crowded into a one-story at the approach of cold weather. It would be bad policy to separate the two stories and introduce a queen to the queenless portion. The stronger we can have our colonies for winter the better.—ED.]

WINTERING BEES IN A SMOKE-HOUSE.

I intend to winter my four colonies of bees in a house 4×6 that is frost-proof. We used to smoke meat in it, so it smells of smoke a little. Would this be injurious to the bees?

Can I feed sugar syrup in a Miller feeder to my bees in winter? C. J. JOHNSON. Falun, Wis., Nov. 16.

[The smoke will do no harm. The temperature, however, should not go below 40 nor above 55. A house that is merely frost-proof is not enough. It should be capable of maintaining a uniform temperature, or nearly so; otherwise it is better to pack the bees good and warm outdoors. A building 4×6 is decidedly small, and you could not, therefore, expect to put in more than ten or twenty colonies. So many bees would make the room too warm, resulting in their flying out and thus weakening the colonies.—ED.]

CELLAR-WINTERED COLONIES IN CHAFF HIVES.

I own 80 hives of bees. I have always kept them in the cellar, but I have put 35 of them in chaff hives. Will they keep in the same cellar with those not in chaff hives, or would you advise me to keep them out of doors? E. MATTY. Syracuse, N. Y., Nov. 12.

[I would put the chaff hives outdoors, and compare results with those in the cellar.—ED.]

NO MORE SEED.

I have been getting letters from bee-keepers wanting seed from the little snow-drop bush in my yard that I wrote you about a short time ago. Please tell your readers that I have no more seed.

Velpen, Ind.

W. T. DAVISON.



Lay not up for yourself treasures upon earth, where moth and rust doth corrupt, and where thieves break through and steal: but lay up for yourself treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal.—MATT. 6:19, 20.

My attention was called to the above text recently by finding a book on the table of a relative of mine. The title of the book was "Moth and Rust." It instantly occurred to me that the book must be something remarkably good; and although it was a very entertaining piece of fiction it had very little to say about that beautiful text. After my attention was called to it, the text seemed to unfold and spread out. It was to me, as I have often mentioned before, a "shining light." It seemed as if I could see those wonderful words emblazoned on the vault of heaven in letters of fire. It comes from that celebrated sixth chapter of Matthew, where Jesus seems to be giving his friends wholesome advice and instruction. He commences the chapter by admonishing us not to do our alms before men; and he tells us when we pray to go into our closets and shut the door. Then he tells us about avoiding vain repetitions, and finally gives us that prayer which has been repeated thousands of times, over and over, and yet few seem to comprehend or grasp the wonderful instruction and truth in that prayer. Finally, when the chapter is about half finished he admonishes us not to lay up for ourselves *treasures on earth*. Oh dear! what a scramble there is for earthly treasures! not only in the way of deal, but under the influence of strong drink, wretches calling themselves men knock down poor hard-working people to get their watches or little hoard of hard-earned savings! And that is not all. Helpless women—women who teach school for a living—have been knocked down in the streets of the cities of *Ohio* just so that some low fiend could grab from them the small pittance they had earned by honest toil. We wonder how anybody calling himself a *man* could get to such depths of selfishness and depravity.

And yet these drunken highwaymen are hardly more to be despised than the millionaires who get their wealth by stealing from the honest tax-payer. The words "moth and rust" took my attention. Mrs. Root spends a great part of her time in house-cleaning. It is hard work. She does it herself, mostly, because nobody else does it exactly to her notion. She says that, unless the house is cleaned about so often, and the clothing, carpets, etc., gone over faithfully and carefully, "moth" will get it; and ev-

ery little while some garment she prizes will be found "moth-eaten." I do not know which she hates more—moth or mice; but she wages incessant warfare on both.* She says if we ever build another house she is going to supervise it personally, and have it *absolutely* mouse-proof. I hope science will enable us also to make a house that is moth-proof very soon. Another thing Mrs. Root can not endure is rust. If I borrow one of her tin pails to use in the greenhouse, it must not only be turned upside down when I am done with it, but she says it should be dried on the stove and then wiped out with a clean cloth. The tin pails that she handles never rust out, even if they *are* made of cheap "Yankee" tin. We have some tinware doing service yet, that was purchased when we were first married, made of good old-fashioned tin. Well, almost every thing in this world rusts if left out in the weather uncared-for. Even the stones in our buildings rust and rot and wear away under the influence of sun, frost, and water. Our iron bridges that cost away up into the millions rust out if they are not kept painted. Every thing in this world wears away and goes to pieces. Now think of the wonderful truth packed in that little sentence, "Where moth and rust doth corrupt." Just take in that word "corrupt." How wonderfully expressive it is! We speak about our men in office who are corrupted by riches. Those at the head of our great insurance companies were so burdened with the millions entrusted to them by the honest, innocent, and unsuspecting people that they became so corrupt they did not seem to have any regard or respect for anybody—neither God, man, nor the Devil, as the expression goes. A few days ago I saw an editorial in one of the daily papers. It got away from me by some hook or crook, and I have not been able to find it since. The editor started out something like this:

"We read in the good book that 'a good name is rather to be chosen than great riches;' but the officers of our insurance companies evidently consider this a mistake. They seem to have decided that *great riches* are rather more important, and a good name of not very much account—at least when they discover their good name is *gone* they manifest but very little concern; and just so they can keep the great riches safely in their clutches they are not much troubled about the loss of their good name. We as a people are taking great pains to send Bibles to the heathen in foreign lands. Why not send some Bibles as well to the officers of our great insurance companies. Perhaps if some of these beautiful passages were marked with a blue pencil they might be induced to read and ponder, and see what they have lost and how *little* they have really *gained*."

* Yesterday I found our grandson Ralph, two and a half years old, with a cloth in his hand dusting and wiping the furniture as well as the floor. He had seen his grandma dusting the furniture, floors, etc., and helped her in her housecleaning. He has surely started out to be a chip of the old block.

Jesus reminded us that, upon this earth, we should find moth and rust constantly corrupting; and at the same time it is a place where thieves break through and steal. A few days ago there was a sudden development of housebreaking and stealing right here in Medina. As we have had no saloons here for about twenty years, property has been tolerably safe, even if you forgot to lock the door nights when you went to bed, or left your potatoes and apples out in the field or in the back shed. Recently there were several raids, and the thief was so low and mean as to take *canned fruit*. Yes, they broke into a comparatively poor hard-working man's cellar, got the most of his canned fruit, and then a week or two later went into the same cellar again and took some more stuff. They did not have the grace to pick out the home of a rich man where the stores would not be missed so much. "Where thieves break through and steal." What do you suppose it costs this nation to keep things locked up so they will be safe from pilfering?

Now, friends, Jesus always gave us a remedy, and he did it in this case. He says, "Lay up for yourselves treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal." What a beautiful place heaven must be! I never thought of it before, but I am going to tell Mrs. Root that, when we get to heaven, we shall have no further worry from moth and rust (nor mice). I will tell her, too, that when we are there she will not need to get up just as she is ready to drop to sleep because we have forgotten to lock the door. Not only will there be no moth, rust, nor *corruption*, but no stealing, because everybody will love his neighbor just as well as he loves himself. None of us will *even covet* what belongs to somebody else. What a happy place, and what a happy people!

But before closing I have something more to say about that word "corrupt"—"where moth and rust doth corrupt." I suppose moth and rust might represent the love of money more than almost any thing else; and I do not know of any thing more corrupting than big salaries with not much to do in return. One of the officers of the Equitable Life Insurance Co. was getting \$150,000 a year; but since the searchlight of public indignation has been turned on him he has repented a little and concluded he could afford to work (?) for only half that amount.*

I have before mentioned the fact that many of our county commissioners, made up

mostly of good honest hard-working farmers, sooner or later learn to puff a cigar; it is reported they also play cards, and drink, but I hope this is not true; but it *is* true that I have been greatly pained and astonished to see so many of them, after they have been in office a little while, get to puffing a cigar. One of the best men I know of, and, in fact, one of the best farmers I ever met, a good Christian man, recently ran for office. I said, as I took hold of his hand, "Bro. X., if you should fill this office (and I honestly hope you will) shall we see you puffing a cigar like the rest of them after a time?" He laughed as he replied that he did not think there was much danger. Well, he did not get the office. I do not know what the trouble was, unless it was that somebody who had hold of the wires feared that he would be *too* straight and square in all that he did.

But of late a big change has been coming over us, not only here in Ohio but in a good many other States. So much crookedness has been brought to light that people are demanding those who are candidates for important offices shall be positively opposed to the saloon gang and the liquor-traffic.

There is another way in which riches are corrupting. Years ago I was introduced to a bright young man—I might say almost a boy—who seemed as pure and honest and true as almost any young man you could pick out. I was told that he would probably be a millionaire; and I began wondering at the time whether money would or could corrupt one who looked so guileless and pure as he did. For quite a time he worked diligently and faithfully in the various mills and factories belonging to his father; but later on he was sporting a high-priced yacht. Although he had a beautiful wife, and a child or two, he got among the fashionables, and it soon became noised abroad that he was pretty intimate with another man's wife. A little later they were off for Europe, traveling together as man and wife. The woman's husband made some show of remonstrance at first, but all at once he gave up and let his wife go. It was whispered that he was silenced with money. This man, because he was a millionaire, was allowed to trample the holiest laws of our land under foot with impunity, and public opinion seemed to say, "Oh! he is a millionaire; he can do any thing he pleases so long as he has money enough to pay for it." God forbid that this thing should continue. I want to live to see millionaires sent to prison like other people unless they obey our laws. I am sure our good President will stand by me in this, even if nobody else will.

Here is something more in the same line, clipped from the *Cleveland Leader*:

MRS. ASAY NOT TO CONTEST WILL.

CHICAGO June 7.—Mrs. Elizabeth Asay returned today from Sharon, Pa., where she attended the funeral of the late Peter L. Kimberly.

Mrs. Asay said to-day: "There is no reason why I should try to break Mr. Kimberly's will. He has provided me with enough money to live for the rest of my life; and, even if he had not, I have means of my own.

* Since the above was written I have come across the following, which I clip from the *Country Gentleman*:

It is all over with Mr. McCurdy. Life insurance companies, like republics, are ungrateful. The aged man (Richard A., we mean) who had served the Mutual so long and faithfully for a meager recompense, who offered to cut his salary in two for the privilege of continuing to serve it, has been cast into outer darkness. He says in his letter of resignation that he needs rest and the trustees in their reply hope he will take it. It might be hoped, also, that he will not be obliged to take it in the penitentiary, for that is not a salubrious place for a man past seventy.

Any one who could be so good to me as he was alive could not forget me in death.

"I lived as Mr. Kimberly's wife for five years. During that time his relatives, his nephews, and others visited us constantly. 'Pete,' I used to say to him, 'what can people think of us?' He used to answer me, 'Well, don't they come here? Why borrow trouble?'"

"I never used his name except when we traveled, and then he would register me as his wife at hotels. In New York and San Francisco and other cities I met all his best friends, who knew that I was not his wife. I knew that this was not right, but what could I do? I wondered at the power of money. What can't money do? His friends seemed to think it all right."

There it is, friends. This poor woman was comparatively helpless in the clutches of that millionaire with all his money—at least she supposed she was helpless. She says, "I wondered at the power of money. What can't money do?" There you have it. This rich man defied public opinion. He defied the laws of our land. He passed this woman off as his wife at respectable hotels when he had a legal wife living; because he had money, and could do things on a large scale, everybody bowed down to him. His relatives came and visited him just as if it were all right. Now suppose this thing gets to be more common—what will be the result? And, finally, what satisfaction or enjoyment could this man get out of life? I wonder if he ever considered what his example was to the younger ones growing up. The man who can reflect, when he comes to die, that he has "fought the good fight and kept the faith," as Paul said he had done, can feel willing to have the younger ones copy his example. He has laid up treasures in heaven. His good name can not be taken from him. Moth and rust will never harm it. But this other one—this millionaire who set an example of going about the world with a woman who was not his wife, where is his treasure? what does he look forward to, and what has he to feel happy about when he comes to die? Jesus told us the fate of such as he in the following:

The Son of man shall send forth his angels, and they shall gather out of his kingdom all things that offend, and them which do iniquity, and shall cast them into a furnace of fire; there shall be wailing, and gnashing of teeth.—MATT. 13: 41, 42.

Dear friends, as I approach the close of this home paper my conscience troubles me because I have had so much to say about laying up treasures *on earth* and the *selfishness* of humanity. Let me give you another glimpse that includes quite a lot of humanity:

In coming home from Indianapolis I shook hands with an officer of the Salvation Army, and began laughing at him because he could not remember me. Then it transpired that he was somebody else. I was in the predicament of the Irishman who met a friend, as he supposed; but when they began calling each other by name he said, "Faith, and it turned out to be *no*ther of us." Well, I have learned to take it on general principles that any one belonging to the Salvation Army is my friend and I am his. And now let me digress a little.

When the papers announced a few months ago that Ashland, the county-seat of Ash-

land Co., Ohio, had suddenly *gone dry*, everybody was astonished, for it is a place of several thousand inhabitants, and a number of saloons have been rampant there as long as anybody can remember. This Salvation Army officer explained to me how it happened—that is, if it really *did* happen. There has been an organization of the Salvation Army in Ashland a good many years; but it had become run down, and its members were half-hearted. A short time ago a German boy in his teens was taken into their ranks. This boy astonished everybody by his zeal and energy in pleading for the Lord Jesus Christ in season and out of season. He built up the Salvation Army and started revivals in the churches; but right in the midst of his work, by some inscrutable act of Providence (or was it some man's folly?) he lost his life. But the work he had started still went on. In fact, his sudden death, perhaps from overwork in pleading for righteousness, seemed to give it a new impetus; and this was the start of a temperance crusade that banished the saloons from Ashland. The result was as it was at Leipsic as I told you about in our previous issue—a great revival started. In the *Cleveland Press* for Dec. 7 we find the following:

HUGE TABERNACLE BUILT IN 22 HOURS FOR A REVIVAL.

Ashland County is in the midst of a religious awakening so widespread as to compel the hasty construction of a huge barnlike tabernacle to accommodate the vast throngs which attend the meetings. The revival feeling has penetrated to practically every home in the city; and businessmen, merchants, laborers, and people of all classes have joined hands with the R. V. M. B. Williams, the evangelist in charge, in making the revival a success.

In such deadly earnest are the people of Ashland that the tabernacle, which will hold 2700 persons, and which is dedicated solely to evangelistic services, was built in 22 hours. Men of all classes joined hands to erect it.

ALL JOIN IN WORK.

Lumber-dealers furnished building material; a real-estate dealer donated the ground, and an army of enthusiastic volunteers gave a day's labor to assist in the construction of the huge building.

The revival began a week ago in the armory, the largest building in this town of 6000 inhabitants. In a few days the attendance grew so rapidly that this building was dwarfed, and the necessity for more commodious quarters forced the erection of the tabernacle. One meeting of the enthusiasts was sufficient to raise the necessary money, and the work was begun at once.

Young men and old, from factory and building; carpenters, plumbers, gas-fitters, business men, common laborers, and others less skilled, drove nails, sawed boards, fitted pipe, hauled straw, graded, and did a thousand and one things necessary for the construction of the improvised house of worship.

The structure is 95 by 130 feet, consuming 45,000 feet of lumber. It is 25 feet in the highest point, and it is lighted and heated by natural gas. The floor of the tabernacle is mother earth, covered with three loads of matted straw, and the place is dry, sanitary, ventilated, and without draft.

It is manifest from the outpouring humanity at the services, which borders on the sensational, that Dr. Williams has the united support of every Christian worker in the county. Dr. Williams is a forceful speaker, possessed of wonderful resources, and a fearless, aggressive campaigner.

There are 200 voices in the choir, which is conducted by Prof. Loay Sutherland, a singing evangelist, of Shelby, Mich.

These services are under the auspices of the Ashland Ministerial Association; and the tabernacle feature, being an entirely new departure along evangelistic lines in Ohio, promises to spread over this State and out of it. There have been 139 conversions, with prospects for more.

Accompanying the above sketch was a picture of the rude tabernacle. Of course it is a temporary one, or perhaps only for this winter and may be another one. Let us hope and work and pray that such things may spread all over Ohio.

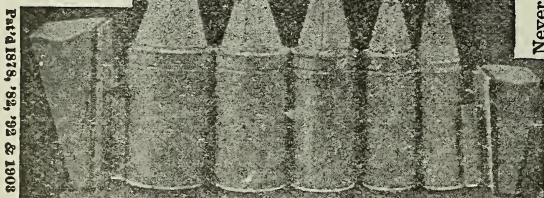
Now, friends, here is one of the grandest illustrations of laying up treasures in heaven. These people gave their lumber, their labor, the materials, and every thing they had or could afford, toward building this large tabernacle for spreading the gospel. It was unselfish; it was for the good of humanity. Every man, woman, and child who had a part in that work will, I am sure, feel it is one of the best investments of time and money they ever made. The memory of it will be a bright spot all through their lives; and when they come to die they will feel happy that at least a part of their time was given then toward laying up treasures in heaven, "where moth and rust doth not corrupt, and where thieves do not break through and steal."

COLLINGDALE APIARY

J. R. Rambo, Collingdale, Delaware Co., Penn.

Breeder of Caucasian and Golden Italian queens; Italians bred from stock received from Swaithmore; Caucasians bred from an imported queen. Queens reared and mated in separate yards, six miles apart. Satisfaction and safe arrival guaranteed. Prices furnished on application. I am booking orders now for the coming season, and will fill same in rotation as received.

HINGHAM
Original
Direct Draft
CLEAN
Bee Smokers



4 Largest Sizes Soot Burning

Never Go Out
And last from 5 to 21 years

HINGHAM was the FIRST

to invent and make a bee-smoker that would burn sound wood, and go all the time without puffing. It has been the *World's Standard* for 26 years. Bingham invented all the patented improvements in bee-smokers, and uncapping-knife for his own use in his own apiary.

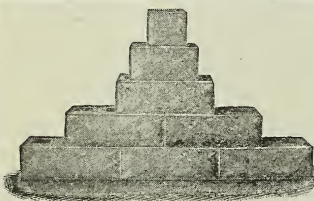
Oxford, O., Sept. 30, 1878.

Your smoker has been in daily use for months in a friend's apiary. He is enthusiastic in its praise, and, after seeing how greatly it facilitates the handling of bees, I heartily endorse all he says of it. L. L. LANGSTROTH.

Tin 4-in. Smoke Engine 3½-inch 3-inch 2½-inch 2-inch Wonder
Prices—\$1.50; \$1.10; \$1.00; 90c; 65c by mail on receipt of price.

T. F. BINGHAM, FARWELL, MICH.

ONLY BINGHAM SMOKERS
Have These Latest Improvements.

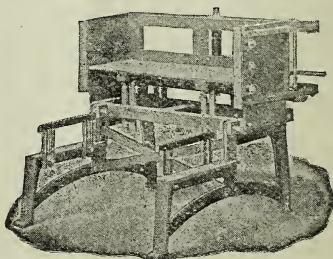


makes from 25 to 35 blocks. Write for descriptive circular and list.

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Medina, Ohio

These Blocks

were made on one of our \$50 concrete building-block machines. Prices range from \$50 upwards. Every machine complete with all parts ready to go to work, and guaranteed to give satisfaction. Two men make from 100 to 150 of these blocks per day. One barrel of Portland cement



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We manufacture every thing needed in the apiary, and carry a large stock and great variety. We assure you the best goods at LOWEST PRICES, and our excellent freight facilities enable us to make prompt shipment over fifteen different roads, thereby saving you excessive freight charges as well as time and worry in having goods transferred and damaged. We make the Alternating, Massie, Langstroth, and the Dove-tail hive.

Our prices are very reasonable; and, to convince you of such, we will mail you our free illustrated and descriptive catalog and price list upon request. We want every bee-keeper to have our catalog. SPECIAL DISCOUNTS now. Write to-day. Address

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CAUCASIAN QUEENS

Guaranteed mated to pure Caucasian[™] drones. Good honey-gatherers. Gentlest bees in World. Can be handled without veil or gloves.

Notice the distinct gray bands on my-strain of Caucasians—can be easily distinguished from other races. I am breeding queens from a mother of wonderful gentleness, whose bees have never stung me even when I have put them to tests that would have infuriated the gentlest of Italians. I have no mis-mated queens for sale—only pure Caucasians; and I guarantee every queen sent out to be mated with a pure Caucasian drone.

Price of Queens, \$5 00 Each.

Place Orders Now with Postoffice Money-order, as Queens will be shipped first to those who place their orders now.

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BASSWOOD
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We make them and the very best of Dovetailed Hives, Shipping-cases, and a full line of bee - keepers' supplies always on hand. We make very prompt shipments. Let us hear from you.

MARSHFIELD M'F'G CO.
MARSHFIELD, WISCONSIN.

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and a Prosperous
Season is yours.....

if you take time by the forelock, and be prepared for the season when it comes. DON'T put off ordering your supplies until you need them. Order now, and get the discounts.

I have a full line of Root's Goods, and sell them at factory prices and discounts. Send me a bill of what you want and let me tell you what I will deliver them at your depot for. Send for my 36-page catalog—it will be sent free—also a full description of the Hilton Chaff Hive and Supers, with a comparison made by the Michigan State Agricultural College between the single and double walled hives. All free for the asking. Cash or goods in exchange for wax.

Geo. E. Hilton, Fremont, Mich.

HOW You Get This New TONGUELESS Disc Harrow FREE

on Thirty Days' Trial

It's this way—

An entirely new feature is embodied in the construction of this Harrow.

The Forward Truck, without any Tongue, positively relieves the horses of all Neck Weight and Side Draft, and allows them free, easy movement. They have just an even, steady pull.

Why should a team, that is already having a hard time to work and travel on rough, uneven ground, be hampered and annoyed by the Threshing of a Tongue, and by the weight of a Harrow Frame?

There is absolutely no reason for it.

To give you a chance to examine this Harrow for yourself, and to prove to you that it is exactly as represented, and that it will produce the results claimed for it, we will send any size you select, on a 30 Days' Approval Test, all Freight Charges Prepaid.

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See What Mr. Weaver says:

Dexter Mo., Oct. 26, 1905.

American Harrow Co., Detroit, Mich.

Gentlemen: We are pleased to write you that the No. 1418 Tongueless Disc has been received and thoroughly tested, and found not wanting anywhere.

We have at last a long felt want supplied—a Tongueless Disc. We have concluded that the draft of this harrow is one-fourth less; three horses will draw this harrow with as much ease as four horses will any tongue disc made. We have often wondered why a tongueless disc was so long in getting made. We are surely pleased, and trust you will never make anything but Tongueless Discs.—Yours respectfully,

L. F. WEAVER.

This Harrow is built on right principles

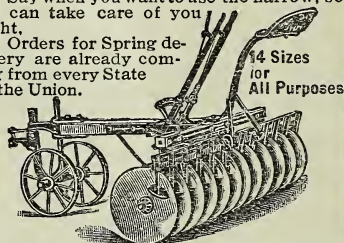
- No Side Draft.
- No Neck Weight
- No crowding of team in short turns
- Just even, steady pull.
- Front Truck carries weight of Frame, and controls movements of Harrow.
- Ball bearings take the end thrust
- Double levers make handling easy.

All our output goes direct to the farmers on the 30 Days' Approval Test Plan, with time to pay if you wish.

The Detroit Tongueless Disc Harrow is protected by exclusive patents and manufactured and sold only by us. Write today for booklet giving full description and prices that will please you.

Say when you want to use the harrow, so we can take care of you right.

Orders for Spring delivery are already coming from every State in the Union.



14 Sizes
for
All Purposes

AMERICAN HARROW COMPANY
4627 Hastings St., Detroit, Mich.



No. 6 Iron Age Combined
Double and Single
Wheel Hoe, Hill
and Drill
Seeder.

Your Spring Help

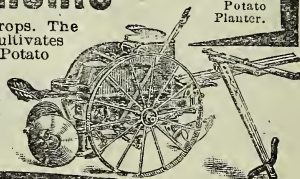
What kind of help will you have this spring. Will you do your work the old way with many men and much expense, or employ the time-saving, laborlessening and money-making

IRON AGE Implements

These implements comprise tools for the cultivation of all crops. The No. 6 tool shown, prepares the ground, sows the seed and cultivates the growing crop. The Iron Age (Improved Robbins) Potato Planter has no competitor. The only planter performing absolutely perfect work. Riding and Walking Cultivators, Sprayers, Hoes, Drills, Potato Diggers, etc., all are shown in the New Iron Age Book. Most complete and instructive look on crop raising published. Write for it. It's Free.

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Iron Age
(Improved
Robbins)
Potato
Planter.



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for only \$52.50. Over the jumps without the jar. Adds life to the vehicle. We offer our genuine, solid rubber, 2-year guaranteed **SPLIT HICKORY HUMMER**

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Northern Seed grown in colder climate and shorter season matures much earlier.

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Made by a Fanning Mill Factory that makes a specialty of high-grade mills.

You should own a Fanning Mill. It will save its own cost in short order. By separating the different grades of grain, you get a fancy price for the best.

Your seed grain will not be mixed. Grain, as it comes from the threshing machine isn't fit to sow.

A fanning mill will clean it—and grade it,—get all the best together,

—take out all the chaff and withered kernels,—remove oats from wheat.

One operation does the business.

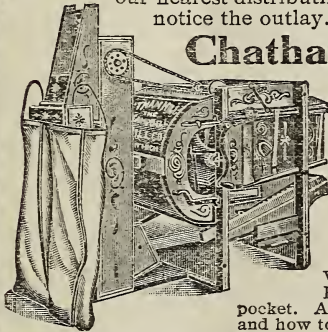
And the fanning makes every bushel worth more money.

Say "good-bye" to weeds in your wheat field.

Just to give you an idea,—here are some of the grains and seeds the Chatham will clean:—

Wheat, Oats, Rye, Barley, Timothy, Clover, Millet, Flax, Rice, Peas, Beans, Corn, Kaffir Corn, Potatoes, Broom Corn, Alfalfa, Grass Seed, Cotton Seed, Alsike, Blue Grass, Red Top, Buckwheat, Hungarian, Orchard Grass, Rape, Rye Grass, etc., etc.

Will you let us tell you about our complete line of Fanning Mills that have the gearing all on the inside and a patent anti-clogging device that prevents choking? We sell direct from the factory and ship to you from our nearest distributing depot. Selling terms so liberal you don't notice the outlay. Sold on 30 days free trial if you wish.



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OVER 200,000 MILLS IN ACTUAL USE.

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WANTED.—Old books on bee culture, especially from foreign countries. Please state titles, authors, year of publication, edition, binding, condition, number of pages, and price wanted.

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WANTED.—A registered bloodhound bitch in whelp to pure-bred dog. In answering please give color, age, and breeding as well as of dog bred to.

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Investigate the Poultry Business

Write for a copy of my book which describes the profitable combinations of Egg, Broiler, and Roaster Farms.

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Send for my complete literature.

CHAS. A. CYPHERS
3927 Henry Street, Buffalo, N. Y.

Hatch and Brood

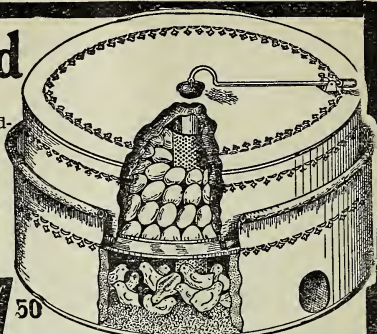
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Here's a new thing—a complete hatcher and brooder, one machine that performs both of these operations at the same time and does both well. The

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is a long step ahead of all others—the most remarkable invention in the poultry world. With it 2 qts. of oil hatches 50 eggs and broods the chicks—brood one batch while you make another hatch. Our nest system enables you to do this. A time-saving, labor-saving, oil-saving machine complete for \$7.50. Free catalog—tells how it works. Regular Cycle Hatchers and Brooders at \$5 each are great favorites. Write today.

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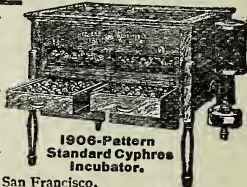
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poultrymen all over the world. No guesswork. They are automatic in regulation and ventilation. Fully guaranteed to give YOU satisfaction. Send for free book. BANTA-BENDER MFG. CO., Dept. 23, Ligonier, Ind.



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made by "the man who knows"—founded on 20 years experience. You can make money with Miller's

IDEAL INCUBATORS

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Guaranteed Self Regulating Incubators at \$1 and \$2 per month. Let RENT rent pay for it. We pay freight. Buy on 40 Days Trial or buy parts and plans and build one. Prices, ready to use: \$5.00 up. Free catalog—tells all.

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to-date dress-patterns at 5 cents each. Illustrated dress-cutting lessons in each issue; good stories; stamps taken. Agents wanted.

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There is no better way for the farmer to widen the circle of his influence than to join with his neighbors in building a telephone line. It extends the neighborhood circle and enables each one to receive advantages that cannot be had in any other way. The cost is meager compared with the benefits of a good telephone line, and progressive farmers, who are awake to their own interests, are building many such lines.

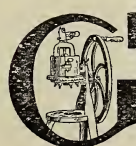
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are used on nearly all farmers' lines because they have been found to be the most suitable telephones for that purpose. It don't pay to experiment when you can get Stromberg-Carlson Telephones and be sure of good service. Start off with the best and your line will always work satisfactorily. You will also avoid the expense of changing instruments in a few months. Book 36 I, "How the Telephone Helps the Farmer," tells how to organize, build, and operate a farmer's line. It's free, and every farmer should have a copy.

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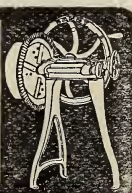


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will save half your feed bills and double egg yield. Guarantee I to cut more bone, in less time, with less labor, than any other. Send for Special Trial Offer and handsome catalogue.

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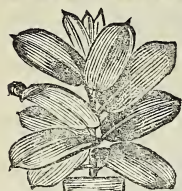
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25 Cents. Will grow in the house or out of doors. Hyacinths, Tulips, Gladiolus, Crocus, Fuchsias, Oxalis, Tuberoses, Begonia, Jonquils, Daffodils, Chinese Lily, Dewey Lily, Gloxinia, Lilies of the Valley—all postpaid, 25c. in stamps or coin. As a premium with these Bulbs we will send FREE a big collection of flower seeds—over 200 kinds.

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850,000 GRAPE VINES

100 Varieties. Also Small Fruits, Trees, &c. Best root-ed stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive price-list free. **LEWIS ROESCH, FREDONIA, N.Y.**

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Don't break your back and kill your horses with a heavy wheel wagon. For comfort's sake get an

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It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

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They
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1906

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It is
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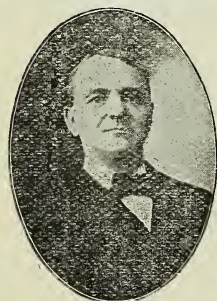
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Six per cent Discount during January on all Orders Accompanied by Cash

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**Lewis Bee-supplies and
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and poultry-supplies at factory prices. Write for the 1906 catalog of either or both. Honey for sale. Beeswax wanted; 26 cts. cash, or 28 cts. when taking bee-supplies in exchange. Six per cent discount on bee-supplies for January.

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THE BEST MADE. RETAIL - WHOLESALE - JOBBING.

Owes its REPUTATION entirely to its MERITS, and our PERSISTENT EFFORTS to MAKE the BEST and KEEP it the BEST. It is tough, clear, and perfectly transparent; has the natural sweet odor of pure wax, and the color of the brightest and lightest lemon and orange. We make a specialty of working wax into foundation for cash by the tens, hundreds, and thousands of pounds, and we are in the best shape to attend to all orders promptly, our capacity being 1500 lbs. daily. Full and complete line of supplies, and the best only. Do not fail to write for samples of our foundation, descriptive catalog, prices, and discounts, stating quantity of foundation wanted, wax to be worked, and list of other supplies, and prices will be accordingly. Beeswax always wanted.

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----"If Goods are Wanted Quick, Send to Pouder."----

Established 1889.



BEE-KEEPERS' SUPPLIES.

Distributor of Root's goods from the best shipping-point in the Country. My prices are at all times identical with those of the A. I.

Root Company, and I can save you money by way of transportation charges.

Dovetailed Hives, Section Honey-boxes, Weed-Process Comb Foundation, Honey and Wax Extractors, Bee-smokers, Bee-veils, Pouder Honey-jars, and, in fact,

EVERYTHING USED BY BEE-KEEPERS.

Headquarters for the Danzenbaker Hive.

If in Need of Finest Grade Honey

to supply your local demand write for my

Monthly Quotations of Indianapolis Honey Market

If you care to secure your bee-supplies now for next season's use I will offer the following very liberal discounts. As an investment every thoughtful bee-keeper should be interested. Goods all "Root Quality."

For Cash Orders Before

January 1..... 7 per cent
February 1..... 6 per cent

March 1 4 per cent
April 1 2 per cent

BEESWAX WANTED.

I pay highest market price for beeswax, delivered here, at any time, cash or trade. Make small shipments by express; large shipments by freight, always being sure to attach your name to the package. My large illustrated catalog is free. I shall be glad to send it to you.

WALTER S. POUDER,

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CO-OPERATION

Means—you work for me and I
work for you for Mutual Benefit

A well known manufacturer wishes
to cash \$2000 worth of goods during

JANUARY.

He has made me the lowest prices I
have been able to secure in years, viz.:

The 8-frame Dovetailed hive, 1½-story, at \$1
each, any frame, any cover, etc.; 10-
frame, \$1.10.

No. 1 white basswood standard-size sections,
at \$3.25 per 1000; No. 2, \$2.75 per 1000.

I will take you, Mr. Bee-keeper, into partner-
ship. There are three conditions, viz. 1st—
Cash to reach me not later than Jan. 30, 1906.
2d—You subscribe for Rural Bee-keeper one
year, \$1.00. 3d—You pay me a commission
for my services, viz., 10 per cent on all orders
for \$50 or less; 8 per cent on \$50 to \$100; 7
per cent on \$100 to \$200; 6 per cent on \$200 to
\$300; 5 per cent on \$300 to \$500; 3 per cent on
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No catalog. Prompt shipment. Money re-
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has been furnishing bees and apiarian supplies of
every desired kind to bee-keepers of the East. A
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Factory Prices.

Everything the bee-keepers need. No order too large
for us, nor none too small. Cash orders before January,
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The best the world can produce. Sample sent, 8 cents.
How much can you use? We always buy beeswax.
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Bee-keepers, Co-operate!

We are Bee-keepers--Organized in
the Interest of Fellow Bee-keepers
(No Matter where They Live)

Membership dues, \$1.00 per year.

Present membership—about 200 bee-keepers.

Our 1906 price list of bee-supplies, and a leaflet
containing valuable information, are now ready to mail.

If you wish to assist in co-operation among bee-
keepers write us now and send the names and address-
es of all your neighbor bee keepers.

The St. Croix Valley Honey-producers' Association

Headquarters Until June 1, 1906

Glenwood, Wisconsin

Something New in Honey-jars...

Cook's Square Jar combines a new fea-
ture that improves the package and
reduces the cost, and is the best and
cheapest 1-pound glass package made.
Send for circular and full catalog of
hives, bees, and useful implements. . .

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The Oldest Supply-house in the East, and
only Reliable goods sold. 10 cents brings
sample jar by mail.

Smokers at Wholesale

for a short time only. Hives, sections, foundation,
and all bee-supplies at bottom prices; circular free.
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A large 16-page, carefully edited farm, fruit, stock,
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industry; everything plain, practical—seasonable and
sensible." It tells how just when you need to know.
Its subscribers say they "would not be without it for
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want to introduce it into thousands of new homes this
year, and—figuring on a basis of actual cost—offer it at
just one cent per copy. Thus, being a semi-monthly,
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and you will get the next 10 numbers. Can you afford
to let this grand offer go by?

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add a few names of your farmer neighbors, for free
sample copies, and you will greatly oblige

Barnum's : Midland : Farmer

M. M. BARNUM, EDITOR

Allen Building, St. Louis, Mo.

Advertising Rates: 2 cents a word, cash with order.

Special Notices

By Our Business Manager

The Mount Pleasant Press, which printed our Christmas cover, sends us the following holiday greeting:

"We send good will to those we serve and to those who serve us; and we ask as much as we send, believing that friendly business is the best business. We wish every proper joy of 1906's most joyous time to all."

To the readers of GLEANINGS, and our friends all over the world, we extend the sentiment of the above; and for each and all may 1906 be the best year yet.

OUTFITS FOR BEGINNERS.

The above is the title of an illustrated booklet of some 16 pages, giving valuable information for the beginner. We have them in the following languages at present: English, Spanish, German, and Polish. Send for a copy if interested. Give one to your bee-keeping friend who reads any of the above languages.

OUR 1906 CATALOG.

Our new catalog is ready for mailing. It contains 44 pages, GLEANINGS size, full of detailed information regarding every thing for the bee-keeper. Whatever you want, we hope to serve you. A glance at the index of our catalog will show how complete it is. Furthermore, we furnish prices by letter on any special goods not listed in our catalog. Early-order discounts from old or new catalogs for cash orders are as follows:

For January, deduct 6 per cent.

For February, deduct 4 per cent.

For March, deduct 2 per cent.

Discount applies from our various branches and jobbing agencies. See p. 1359, Dec. 15th issue.

Convention Notices.

The annual meeting of the Nebraska State Bee-keepers' Association will be held on Wednesday, January 17th, at 2 P.M., at the Experiment Station Building of the Nebraska State Farm at Lincoln, Neb. The meeting will be of interest to all bee-keepers. E. Kretschmer, of Iowa, will read a paper on "Bees and Fruit." H. F. Smith, Assistant in Department of Entomology, University of Nebraska, will read a paper entitled "The Relation of Robber-flies and the Honey-bee." A general discussion will give all present an opportunity to discuss subjects of interest.

Lincoln, Neb., Dec. 16. LILLIAN E. TRESTER, Sec.

The Colorado State Bee-keepers' Ass'n convention will be held in the Chamber of Commerce, Denver, Jan. 30, 31, 1906. This will be during "farmer's week," when many farm organizations meet in the city, and low railroad fares are assured. As usual we expect a good convention—possibly some new features, such as a competition in putting up sections and putting in starters.

R. C. AIKIN, Sec.

Same Old Place

is where you get the best of queens; untested, \$1.00; \$4.25 per 6; \$8.00 per dozen. Tested, \$1.50; best breeders, \$5.00. Absolute satisfaction and safe arrival guaranteed. Carniolans, Cyprians, Holy Lands, Italians.

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STEVENS TAKE DOWN SHOTGUN FREE BOYS!

We have bought a number of these guns and are giving them away. We guarantee you can earn one in a day easily.

Many have earned one in an hour. No cheap pictures or jewelry to sell. Our plan does all the work. Simply say you want a gun and you will be surprised how simple our offer is and how easy it is to get the gun. Do not delay or somebody will get ahead of you. Write today. We refer you to any bank in Des Moines. We are a responsible firm and do as we agree. Never will you have another chance so do not delay. Write at once.

DESCRIPTION.—Single barrel, take-down pattern; choke-bored, insuring superior shooting qualities; automatic shell ejector; case hardened frame; top snap action, rebounding lock, walnut stock, hard rubber butt, reinforced breech, 12-gauge, 28 or 30 in. barrel. Will shoot any shell made, Winchester, U.M.C., etc. Every detail perfect. Can be taken down instantly into two pieces.

Write for book telling what dozens of Weight 6½ lbs men and boys say of this gun. Write today.

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DES MOINES, IOWA

Successful Farming,

Fruit Growers and Farmers.

Thousands of the best fruit-growers and farmers read the **Southern Fruit Grower** because they find it the most helpful fruit paper published. Contains 24 to 40 pages of valuable fruit and farming information every month. 50c a year. Send 10c and 10 names of fruit growers and get it 6 months on trial. Sample free. The Southern Fruit Grower, Box 1, Chattanooga, Tenn.

85 cts. for 15 Names.

Send us the names and postoffice addresses of fifteen good farmers and fifteen cents—stamps taken—and we will send you for two years the Farmers' Call, a weekly, 25 years old, more than 1200 pages a year; regular subscription price 50 cents a year. Sample copy free.

FARMERS' CALL, Quincy, Ill.

A. H. REEVES

DISTRIBUTOR OF BOOY'S GOODS FOR

NORTHERN NEW YORK

Perch River, Jefferson Co., N. Y.

NOTICE!

The firm of Cooley & Deuel has dissolved partnership. D. Cooley will continue to sell bee-supplies. All orders will receive prompt attention. Address all orders to D. Cooley, - - Kendall, Mich.

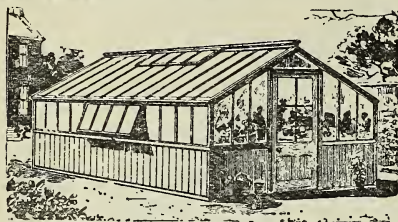
THE FINE 80 acres advertised in the Christmas Number of GLEANINGS, I forgot to mention, is located in Calhoun County, Iowa, near Rockwell City. The soil is practically inexhaustible for corn or grain.

D. E. L'HOUMMEDEU, Colo. Story Co., Iowa.

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PLEASURE AND PROFIT

A Premier Greenhouse will keep you supplied with flowers, fruits, and vegetables all the year round. Saves its cost in a season; gives tone to your residence, and creates a pleasant and profitable hobby.



The illustration shows a Premier Greenhouse length, 12 feet; width, 8 feet; height, 8 feet. It has double walls, double-strength glass, plant-tables, etc., fitted complete; built in sections, and can be erected in two hours. The price is \$63.00.

George B. Clementson, Esq., Lancaster, Wis., writes: "The Premier Greenhouse is the most attractive proposition for the plant-lover I have ever seen."

Catalog and price list on application. Greenhouses from \$20.00. Conservatories, Garden Frames, Summer Cottages, Auto-houses, Poultry-houses, and Portable Buildings of every description.

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Dept. B C, Premier Manufacturing Works, St. Johns, Mich.

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2 Years Guarantee. Write for free 1906 catalog, over 100 styles.

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SPLIT \$35
HICKORY Built to Order
MARVEL

The Best Fruit Paper

is The Fruit-Grower, published monthly at St. Joseph, Mo. The regular subscription price is a dollar a year but if you will write for free sample copy and mention this paper, you will receive a proposition whereby you may secure it one year WITHOUT COST. Every one who has a few fruit trees or a garden, should read

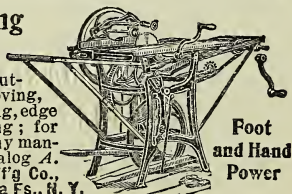
THE FRUIT-GROWER
ST. JOSEPH, MISSOURI

Every issue is handsomely illustrated and from 32 to 64 pages a month are filled with interesting matter pertaining to fruit-growing and gardening. The first four issues of 1906 will be handsome special numbers devoted to the following subjects:—January, The Horticultural Societies; February, Spraying; March, Gardening; April, Small Fruits. Any one of these numbers will be worth a dollar to you. We publish the "Brother Jonathan Series" of fruit books. Send your name and learn how to secure these books free.

Fruit-Grower Co. 152 S. 7th, St. Joseph, Mo.

Wood-working Machinery.

For ripping, cross-cutting, mitering, grooving, boring, scroll-sawing, edge moulding, mortising; for working wood in any manner. Send for catalog A. The Seneca Falls M'fg Co., 44 Water St., Seneca Falls, N. Y.



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The Pump That Pumps

SPRAY PUMPS

MYERS

Glass Valve

PUMPS

Double-acting, Lift, Tank and Spray

Store Ladders, Etc.

HAY TOOLS

of all kinds. Write for Circulars and Prices.

Myers Stayon Flexible Door Hangers

with steel roller bearings, easy to push and to pull—cannot be thrown off the "track"—hence its name—"Stayon." Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.

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Save Half Your Fuel

BY USING THE
ROCHESTER RADIATOR

Fits any Stove or Furnace.
Write for booklet on heating homes.

Rochester Radiator Co.
50 Furnace St., Rochester, N. Y.

Price from \$2.00 to \$12.00.

For hard or soft coal, wood or gas.

COILED SPRING FENCE

FENCE

Closely Woven. Can not Sag. Every wire and every twist is a brace to all other wires and twists full height of the fence. Horse-high, Bull-strong, Pig-tight. Every rod guaranteed.

30 DAYS FREE TRIAL

and sold direct to farmer, freight prepaid, at lowest factory price. Our Catalogue tells how Wire is made—how it is galvanized—why some is good and some is bad. Its brimful of fence facts. You should have this information. Write for it today. Its Free.

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HEAVIEST FENCE MADE

All No. 9 Steel Wire. Well Galvanized. Weighs 1/4 more than most fences. 16 to 85¢ per rod delivered. We sell all kinds of fence wire at wholesale prices. Write for fence book showing 110 styles. The Brown Fence and Wire Co., Cleveland, Ohio.

FENCE

Strongest Made

See how closely it is woven. Sold direct to the farmer at factory prices, on 30 Days Free Trial. Your money back if not satisfied. Write today for free Catalogue.

COILED SPRING FENCE COMPANY
Box 101 Winchester, Indiana

TO THE BEE-KEEPERS OF CANADA

WE ARE pleased to say that we are able to offer, in Canada, goods manufactured by The A. I. Root Co. While we are not able to offer every thing listed in their catalog, we have selected such articles as we believe will best meet the wants of the Canadian bee-keepers. Moreover, what we do list we propose to keep in large quantities, and will be able to ship promptly.

The heavy duty and freight charges we have to pay make it impossible for us to sell in Canada at Root's prices. We have, however, made prices as low as possible, and in no case do we charge nearly as much extra as the amount of freight and duty we ourselves have to pay on the goods.

We would ask you, when comparing our prices with those of other dealers, to take into consideration the QUALITY. If you do so we feel satisfied that you will place your order with us. The splendid quality of the material sent out by The A. I. Root Co. has given "Root's Goods" a world-wide reputation. Remember, "The best is cheapest."

E. GRAINGER & COMPANY

Deer Park

Toronto - Ontario - Canada

CANADIAN AGENTS FOR
THE A. I. ROOT CO., MEDINA, OHIO, U. S. A.

Bee-Supplies

For Southern

Bee-Keepers

I have been over 20 years in the bee-supply business, manufacturing hives and fixtures, and raising bees and queens. With all this experience and the excellent facilities I have, I am able to fill your orders promptly, and give absolute satisfaction. Though I make my own hives I carry a complete stock of The A. I. Root Company's manufacture. Just specify "Root's Goods" and you will get them.

Bees and Queens

I breed with scientific, intelligent methods, from the best Imported and Long-tongued stock. Cheap queens may be had elsewhere. My stock is worth every cent of the price. You will be pleased with it. I GUARANTEE IT.

64-page Catalog

of Supplies and Bees sent free. Tell me you saw my ad. in GLEANINGS.

J. M. JENKINS
WETUMPKA : ALABAMA

ANNUAL CLEARING SALE

In order to make room for our new goods, and save work of inventory, we shall close out our stock of BEE-SUPPLIES, GREATLY REDUCED RATES

For all cash orders for January, deduct 6 per cent. The man that is up to the "snuff" will not miss this. He looks ahead, and when such a saving as this presents itself he grabs it up. Why don't you? Make your bees make money for you.

POULTRY-SUPPLIES AT DEALERS' PRICES

Have you ever written us for quotations on all kinds of feed for your fowls in quantities? We can save you money. Car of grain just in; Beef Scraps, Scratching Feed, Clover Meal, Morning Mash, Kaffir Corn, Sunflower Seed, Charcoal, Bloodmeal, Grit, and Shells.

HIGH-BRED : COCKERELS : FOR : SALE

Yes, yes, yes, and bred from our own yards. Barred Plymouth Rocks, S. C. Brown, Black, and White Leghorns; and White Wyandottes. Can also get you any variety you want, males or females, and guaranteed to be pure bred. Our goods always please our customers. Try us.

HONEY AND BEESWAX WANTED

We pay highest market price for honey and beeswax, and shall be glad to hear from those having any for sale; or, should you want to buy, write us for quotations. Satisfaction guaranteed. Our sixty-page catalog sent any where for the asking. We sell goods any where, no matter where you are.

GRIGGS BROS. TOLEDO, OHIO

CENTRAL PENNSYLVANIA

I am in an unexcelled position to furnish bee-keepers within a hundred miles of Williamsport with Root's bee-keepers' supplies. We have four railroads and three express companies — Adams, American, and the United States. Can deliver goods with great promptness, and save you freight charges. Wholesale or retail. Also can supply you with pure-bred Italian and Caucasian bees in season. Write for our price lists.

E. E. PRESSLER

633 Lycoming Street

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SUPREME EXCELLENCE

is only another name for OUR Make of

BEE-KEEPERS' SUPPLIES


Have you ever used them? If not, give us a trial order this spring. We will do our best to please you. Our prices are as low as any; and if our goods aren't as we claim you'll not have to pay for them.

We Allow Usual Discount for Early Orders

In January, 6 per cent; February, 4 per cent; in March, 2 per cent.
Our large illustrated price list and copy American Bee-keeper free.

The W. T. Falconer Mfg. Co.

Jamestown, New York

 The *American Bee-keeper* for January contains excellent photographic illustrations of Artificial Honey-Comb made over 30 years ago in New England, together with illustrations of the implements used in making, and a portrait of the inventor.

Dadant's Foundation

Bee-keepers like it or they wouldn't buy it. It excels. Sample free. Over 100,000 lbs. sold in 1905. Beeswax wanted at all times. Revised prices on foundation for 1906.

Grade	Size, and Sheets per Pound	In lots of				
		1 lb.	5	10	25	50
Medium Brood....	7 $\frac{3}{4}$ x16 $\frac{7}{8}$ 7 to 8	55	53	51	49	48
Light Brood.....	7 $\frac{3}{4}$ x16 $\frac{7}{8}$ 9 to 10	57	55	53	51	50
Thin Super.....	3 $\frac{7}{8}$ x15 $\frac{1}{4}$ 28	62	60	58	56	55
Extra Thin.....	3 $\frac{7}{8}$ x15 $\frac{1}{4}$ 32	65	63	61	59	58

Bee-supplies of All Kinds

DISCOUNT FOR EARLY CASH ORDERS
January, six per cent; February, four per cent; March, two per cent; after April 1st, no discount.

Wax Worked into Foundation.
Twenty-eighth Year.
We Guarantee Satisfaction.
Send for Our 1906 Catalog.

Dadant & Son, Hamilton, Ill.

New Goods-Big Stock

New Warehouse, Root's Goods,
Prompt Shipment, Low Freight.

Everything for the Bee-keeper at Savannah, Ga.

We are prepared to furnish promptly a full line of supplies, choice new stock just from the factory.

BEEES AND QUEENS

We have large apiaries of fine stock. Book your orders at once as there will be a heavy demand this season. Catalog sent free. Correspondence solicited. .

HOWKINS & RUSH

124 West Liberty Street

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